

MARCH 25c

Coronet



sleepy
June
u Sp

A lyrical, full-color, portrait of

America, the Beautiful"...

The song of America painted in picture story prose



If a man does not
make new acquaintances,
as he advances through
life, he will soon find
himself left alone.
A man, Sir, should
keep his friendship
in constant repair.

SAMUEL JOHNSON

Mario Donigan
7-29-46

AP
2
C826

Coronet

Contents for March, 1946



Publisher: DAVID A. SMART

Editor-in-Chief: OSCAR DYSTEL

Executive Editor: GORDON CARROLL

Managing Editor: HARRIS SHEVELSON

Contributing Editors: SIDNEY CARROLL
CAROL HUGHES

Art Director: ARNOLD RYAN

Production Director: GUS BERKES

Research Director: FRITZ BAMBERGER

European Editor: ARNOLD GINGRICH
*Le Paquis, St. Saphorin,
Lavaux, Vaud, Switzerland*

CHANGING YOUR ADDRESS?

Subscribers changing their addresses should notify the Coronet Subscription Department, 919 North Michigan Avenue, Chicago 11, Illinois, one month before the change is to take effect. Both old and new addresses must be given.

CORONET, MARCH, 1946

Coronet is published monthly by Esquire, Inc. David A. Smart, President; Arnold Gingrich, Vice-President; Alfred Smart, Secretary and Treasurer; A. L. Blinder, Vice-President and Circulation Director. Publication, Circulation and General Offices, 919 N. Michigan Av., Chicago 11, Ill. Entered as second class matter at Post Office at Chicago, Illinois, on October 14, 1936, under the act of March 3, 1879. Subscriptions \$3.00 per year in advance; no charge for Foreign or Canadian postage. Printed in U.S.A. Semi-annual index available on request.

Note of Caution: Copyright under International Copyright Union. All Rights Reserved under Inter-American Copyright Union. Copyright 1946, by Esquire, Inc. Title Registered United States Patent Office. Reproduction or use, without express permission, of editorial or pictorial content, in any manner is prohibited.

Articles

Why I Go to Church.....	WILLIAM F. McDERMOTT	4
A Primer in World Government.....	OWEN J. ROBERTS	7
Don't Be Ashamed To Cry.....	W. A. S. DOUGLAS	11
How To Chill a Spine.....	CAMERON SHIPP	15
Some Things You Should Know About Soap	DR. HERBERT L. HERSCHENSOHN	19
One American Family.....	JIM KJELGAARD	22
Cracker-Barrel Forum.....	DAVID LOUIS	26
Good-bye to the Field of Honor.....	ANTHONY PARKE	28
How the Handicapped Fight Back.....	DOLPH SHARP	32
Super-Billion-Dollar Secretary.....	BASCOM N. TIMMONS	35
How To Develop Creative Imagination.....	D. E. LURTON	42
Medicine's Powerful New Ally.....	NORMAN CARLISLE	45
You'll Have Service, Not Servants.....	CHARLOTTE PAUL	49
What's Your IQ on Animals?	EUGENE KINKEAD	59
Titan of the Desert.....	FREDERICK HALKETT	68
Old Jim: Symbol of a Nation's Growth	CAROL HUGHES	76
Songs That Changed History.....	DORON K. ANTRIM	80
Kettles by "Burkhard"	RALPH L. BOYCE	83
Miracle Man of Mexico.....	MURRAY MORGAN	84
Wilderness Shopping Service.....	ANDREW H. HEPBURN	88
Your Fingerprints Are Your Friends	WILLIAM STEPHENSON	91
Otis Takes You Up and Down.....	CECIL WILLIAMS	111
Bug Bombardier.....	ALFRED H. SINKS	114
They Keep Their Ears to the Air	HARRY EDWARD NEAL	117
Dr. Lahey: Genius of Surgery.....	J. D. RATCLIFF	120
How the Camel Came to America.....	ZULMA STEELE	126
All-American Landscaper.....	DIANA J. MOWRER	129
The Case of the Night Stroller.....	ALAN HYND	134
Something New—and Cheap—in Furs.....	MARY CLARKE	139
There's Money in the Mail-Order Business	RHODA RODER	141
Britain's Man of Destiny.....	OLGA DAVIDSON	144

Features

Out of This World.....	39
America, the Beautiful: <i>Picture Story</i>	53
A Treasury of Literary Classics.....	61
The Coronet Game Book Section.....	70
Behind the Baton: <i>Picture Story</i>	95
The Hands of Katharine Cornell.....	119
Our Human Comedy.....	132
The Coming Age of Rocket Power: <i>Book Condensation</i>	G. EDWARD PENDRAY 146
A Gem from the Coronet Story Teller.....	163
Susan Vance: <i>Cover Girl</i>	KODACHROME BY MEAD-MADDICK

VOL. 19, No. 5; WHOLE NO. 113

Here is an inspiring message from one who has found rich treasures in the house of God



Why I Go to Church

by WILLIAM F. McDERMOTT

WHENEVER I move into a new community, I make a point of joining a nearby church immediately. To me, churchgoing is an adventure, not a chore. It gives me a chance to range the universe in thought—and the world in service. It refreshes me physically, stimulates me mentally, quickens me spiritually. And, always, I find there the opportunity for new friendships that I can gain nowhere else.

Of course there are self-seekers in every church, but by and large the members are genuine, sociable and glad to welcome strangers. My most valued friends are those I have discovered through church connections. I have found, too, a tremendous family value in church attendance. Take the matter of sickness. While I have never been caught unexpectedly in a strange community with desperate illness in the dead of night, I know of many who have.

Down the street from one church I attended lived a young family new in the city. The husband was away often on business, leaving his wife and baby alone in the apart-

ment. One night the baby was taken with convulsions. The frantic mother didn't know where to turn to find a doctor quickly. Names in the phone directory meant nothing to the distracted woman.

Then she remembered the church on the corner, with the parsonage next door.

Desperate, she wrapped her baby in a blanket, raced down the street at 2 a.m. to the preacher's home. There she found immediate help. The minister's wife, a trained nurse, gave first aid, while the parson himself phoned a physician who was a leading member of his church. They saved the baby's life and won the mother's everlasting gratitude. That preacher and his wife have ministered similarly to more than three thousand strangers. City physicians do not always answer blind calls any more, but an appeal from a pastor will get results.

Through my contact with the church, I have found that the personal services rendered by it are almost incalculable. I know scores of homes that have been kept intact because the minister reconciled

domestic difficulties; erring husbands and wives have been restored to paths of rectitude by a fatherly warning from a clergyman; and where death or misfortune enters, the minister is a friend of all.

The service of the church through its ministers is generally known where someone has died; but little is known of marriages quietly arranged when boys and girls are in trouble; how mercy is asked of courts where wayward sons are on trial; how a ton of coal, a grocery order, clothing, medicine, even temporary living quarters, are provided for the destitute; how entry into old people's homes is arranged for the feeble; how flowers and gifts are taken to the lonely; how the poor are kept from pauper burial in potter's fields.

I LIKE to go to church because I gain world-contacts through religious affiliation. The preacher bores in deeply as he seeks the true meaning of events and their relation to life. He looks ahead for a perspective. He speaks of years, not of days; of nations, not of townships. He sees God's hand directing the world to its destiny, yet providing a firm clasp to guide wayfaring man upward. In the hurly-burly rush of daily life, our vision becomes distorted. By spiritual interpretation, the minister brings our daily life and its real purpose back into sharp focus.

As a church member, I belong to the largest, most cosmopolitan group in the world. The Christian faith, of which I speak, numbers more than 600 million adherents. Its charter, the Bible, is printed in more than a thousand tongues. Its

major divisions, to which seventy million Americans belong, are world wide in scope. The gifts I drop in the plate on Sunday mornings span continents in their service. Though my contribution is small, it is divided among scores of nations and tribes. When I realize that at least 85 per cent of my gift actually reaches needy people over the world, I feel great satisfaction in the achievement.

My church furnishes me with vividly written literature that tells about my own world service. But more than the literature is the chance to hear firsthand the story of world travelers who see the hidden places and people of the earth as no others do—the missionaries. In normal times, American churches maintain more than 25 thousand missionaries abroad. They return on furloughs to tell our congregations of their dramatic work in healing disease, breaking down ignorance and superstition, introducing civilization at its best.

I have found that by studying what my church is doing abroad I get an education in the psychology of other races, the economics of less fortunate peoples, the problems of many lands. I learn what scientific farming, modern sanitation, printing, medicine and nursing, teaching and preaching are doing to bring the material advantages of Western civilization to populations far greater than our own.

I get a thrill out of the fact that the church is the most democratic institution on earth. Anyone can belong, regardless of status in life. In the process of expanding, of course, the church acquires some questionable material. But when a

businessman told Dwight L. Moody he wouldn't join the church because it was full of hypocrites, Moody flashed back, "Come on in, there's always room for one more!"

I like to go to church because it is a going institution. Somehow it succeeds in spite of all obstacles. It's always poor, yet it doesn't starve. In 1929, Chicago had 1,600 churches and 233 banks; at the end of the depression it still had 1,600 churches, but only 54 banks. The Gibraltar of finance didn't prove quite as strong as the Rock of Ages.

One of the greatest stimulations I derive from church connection is in exploring the Bible under trained leadership. It is the classic of all literature: its poetry, history and drama are unsurpassed. Spiritually, it is the record of the search of the human race after God and of God's revelation of divine purpose to man. The Bible is not easy to read, but the average minister will gladly tutor any person or group wishing to mine its wealth.

I also go to church because I want my children to acquire the habit. There they meet the finest youth and absorb the best ideals. As my children grow up under the influence of church attendance, religion becomes a vital part of their life. They form habits of charity, good will and cooperation that will

make them the highest type of adult citizens.

I consider the church my best friend because it glamorizes the present and glorifies the future. It constantly reminds me of the dignity of man and of his labor. It makes eminently worthwhile every decent thing we do, it holds forth the promise of fulfillment in immortality. The Jew in his synagogue and the Christian in his church find alike the fellowship with God that makes life on earth noble and the life hereafter worth struggling for.

The crowning thrill of religion, of course, is experienced in worship and devotion. The spirit of worship is progressively enriching and delightful. Yet it must be cultivated to be appreciated. Liturgy that may at first seem meaningless becomes an inspiration. Worship may be had in the open field, in a hall or in the home, but it reaches its heights in the beauty of the church. There one really finds fellowship with the Eternal.

Perhaps it's just a little church down at the corner, seemingly slow and old-fashioned. It may be closed most of the time. But it has a treasure for me now, and promises a richer one with passing years. You, too, can collect the same treasure. Have you ever tried it?

Letter of The Law

CHESLEY ARTHUR GRAGG of Dallas, Texas, under sentence of death for the drowning of his wife, almost had a chance for life because there was legal doubt of the medium in which she was drowned. The defense attorneys pleaded that the indictment did not say whether Mrs. Gragg was drowned in "tea, coffee or water."

—M. F. KENNEDY

A distinguished American offers a simple program for preventing future wars through world organization

A Primer in World Government



by JUSTICE OWEN J. ROBERTS

Former Associate Justice Roberts of the United States Supreme Court is one of many prominent Americans who today are advocating a World Federation. The editors of Coronet believe that men and women everywhere should talk about world peace and the methods by which it may ultimately be achieved. For that reason Coronet, without necessarily identifying itself with Justice Roberts' proposals, offers this article as a springboard for public discussion.

IT CAN HAPPEN on the street of any town in America. A thug swings a blackjack at the head of a citizen and reaches for his wallet. The victim yells "Help—police!" Around the corner comes a policeman who nabs the thief, puts on the nippers and takes him off to the police station.

The thug is held for court by a magistrate, he is tried before a judge and a jury of his fellow-citizens, he is found guilty, and the

judge sentences him to prison.

This happens every day—everywhere. But did you ever stop to ask, *how and why* is a policeman?

Perhaps the answer will be simpler if we take another case. In a South Pacific jungle a native is walking down a trail when another dark-skinned fellow clouts him with a club. The victim does not yell "Police!" Why? Because there are no police.

How is it that in America there are policemen and in Oceania there are none? If you stop to think, you'll know the answer. In the one place there is government; in the other there is not.

Now "government" is an imposing word, but its meaning is simple enough. It means that the people of America have rules which they have adopted to apply to every citizen. They can change the rules

if they desire, but until they change them, everybody must obey.

Each citizen, however, can't discuss and vote on the rules, so he elects representatives to debate and adopt them. Each citizen can't enforce each rule, so his representatives choose a police force to do the job. Yet neither the citizen nor the police officer can *finally* render justice to offenders. So the people set up a court to hear what the citizen and the policeman and the prisoner have to say, and then decide whether the prisoner broke a community rule of civilized living and how he is to be punished. This is *the enforcement of law*.

In the South Pacific, the savages have not got that far. They don't understand a government; there are no rules, no police, no courts. The only way for the ambushed victim to get "justice" is to heal his wounds and then set an ambush of his own for his assailant. Thus, violence continues until one or the other is killed or surrenders. *That is war*.

LET'S TAKE another case, one involving two neighboring American communities, called A and B. The people in A are doing something to injure a citizen of B, and what they're doing violates a law of B. The citizen goes to a policeman and asks him to arrest some of the offenders. The officer says: "Why, I'm a policeman of B. I can't go to A and arrest people. You couldn't even get a warrant from our magistrate to arrest people in A who have never been in B, just because they happen to violate one of our City Council laws. You must be crazy!"

The officer is right. The only

way for B to make the people of A stop what they're doing is to fight them. But that won't do. So what can be done?

The citizens of both towns reside in the same state. And the representatives of all the people of that state make laws that bind every citizen. So if a citizen of A breaks one of those laws, a citizen of B (or any other city in the state) can have him arrested and tried.

The same principle applies to people who live in different states. Laws are needed to regulate all the people in all the states. So the people elect representatives to Congress to pass only such laws as are needed to take care of interests that no one state can care for, or that no one state can compel the people of other states to respect.

Thus we prevent wars between towns and between states. We, the people, have different governments to attend to different things. We have town government, county government, state government, national government. At every level there are policemen or sheriffs or state police or the FBI to enforce laws.

Right now, each man and woman in the United States is a member of several governments. Yet none of these governments is fighting the other, because each is caring for a portion of our national needs. We speak of "my town," "my state" or "my nation" with pride. We are loyal to each, for each exists because we want it to exist, and each serves us in a different way.

But what about nations? Where was the policeman to arrest the Germans when they attacked Po-

land or France? There was none. Why? Because between nations, jungle law still rules. Each nation does as it pleases. Like the South Sea savages, the only way for Germany and France to settle their differences was to slug it out until one or the other surrendered.

Obviously this doesn't make sense. The *people* of the various nations do not want war; they hate it. They want to be left alone, they want to enjoy a better and happier life. But as things are, do they have a choice? They do not! A nation controlled by a dictator starts a war whenever the dictator thinks he can get away with it, and the peace-loving people attacked either fight back or become slaves.

CAN THE PLAIN people who have to fight, to suffer, and to pay for wars get relief? Certainly. If they will join in creating a government to regulate weapons, to jail offenders who break the rules of international good conduct, they can have peace.

This government must maintain a police force able to inspect factories that might be making atomic bombs, rockets or poison gas, to bring the makers to justice, to destroy the weapons and to prevent further manufacture.

We are told today that we have such a police force under the United Nations Charter. This is not so. Under the Charter the various nations, *if they so agree*, can put their troops at the call of a Security Council. But whether we or other nations will supply sufficient troops so that the Council can send them across the world against aggressors, we do not know. Even if we sent

them, we do not know who would be in command.

Clearly this is not a *real police force*. A police force must have a chief—just *one* chief. Imagine what would happen in the state mentioned above if the only police were those of towns A and B. Imagine, too, the confusion if the police of the two towns could only be sent to deal with trouble if the mayors of A and B agreed to send them, and further agreed who should command. Would police of the two cities be sent throughout the state to quell disorder? We know they would not.

So if we are to have an international police we must have (1) a government in which all the people of all the nations are represented; (2) laws made by their representatives; (3) police belonging to that government to enforce the laws; (4) courts of that government to punish lawbreakers. Then we could *really* have peace, just as we now have peace in all our 48 states.

Why can't we have that sort of international system? The answer is we can if we, the American people, really want it. But now that World War II is over, we are fast forgetting the cause of the war, which was the national self-will of independent nations.

The plain people of America ought to make up their minds that they are going to have peace in this world and that their representatives in Congress must demand a government that is higher than the government of any nation, including our own. It is silly to say that because there always have been wars there always will be. Bubonic plague was a scourge a hundred

years ago. But the people set their will to fight the disease and they conquered it. Bubonic plague today is almost unknown amongst civilized people.

If people want to eliminate war, there is a clear, simple and tested way. We have found the way in our own nation. Shall we take that road as amongst the people of our own and other nations, or shall we wait for another World War started

by some nation whose rulers are bound by no law?

The choice is ours. If we forget the past, we shall soon wake up with a shock from which civilization may never recover. Think about this—do something about it. Make *your* will known so that the world may be governed by an international government and live in peace, not just for a generation but for hundreds of years to come.

Medical Pioneers



LONG IN 1814 a French physician, René Theophile Hyacinthe Laennec, was strolling near the Necker hospital in Paris. His attention was drawn to some children riding on a seesaw. He watched them with great interest, for one child laid his ear on the end of the seesaw while the child on the other end scratched the board with a pin.

Laennec stopped and thought: "Is it possible that they can hear through that wood?" He tried it. They could. His next idea was "Could sounds be heard within the human chest by using a paper tube or cylinder?" He tried it.

Laennec recorded the sounds, thereby sending his name down through the ages through the invention of the stethoscope.



HAVE YOU EVER had a doctor tap around your shoulders and chest with the ends of his fingers? This accepted medical routine was started by a doctor who, as a boy, had often watched his father tap wine casks in order to determine how much wine they held.

Leopold Auenbrugger was the son of an Austrian innkeeper. As a doctor he was appointed court physician to Maria Theresa.

One day a patient of Auenbrugger's died. He opened the body and found the chest full of fluid. Auenbrugger cursed himself for not having considered the presence of fluid before. But how could one ascertain its presence in the human body?

Suddenly he recalled how his father had tapped the wine casks. He knew the human chest was much like a wine cask—a rigid, opaque wall with air above and fluid below.

He experimented and in 1761 published a book describing the procedure which he called "percussion." Percussion is considered one of the most important discoveries in the history of medicine.—RUTH MILLER GROMLEY

Even the world's greatest men sometimes shed tears of grief and of pride

Don't Be Ashamed.



To Cry

by W. A. S. DOUGLAS

BACK IN THE middle '20s, when I was a reporter for the Baltimore *Sun*, I was sent to Pittsburgh to cover a murder which had its start in the mysterious disappearance of a young and beautiful married woman. She was finally traced to the apartment of a bootlegger with whom she had been having an affair: he had killed her and fled town. When the police found her she wasn't at all the pretty thing she had been in life.

The girl's husband, a plain hard-working person who had had com-

plete faith in his erring wife, was brought to the apartment to identify the body. Describing his reaction in the story I wired to Baltimore that night, I wrote that the grief-stricken young man "broke down and cried like a baby." I thought this was a fine line, and was still congratulating myself when a colleague brought me a telegram signed by my managing editor, Bill Moore.

"Use expression quote broke down and cried like a baby un-quote just once again," read the wire, "and you go off this payroll. Women may cry like babies and for no reason, as do babies. But when a man cries he has something to cry about, as you saw today but failed to understand."

Returning to the home office, I brought up to Moore his observation on tears. "Suppose," I asked, "that I had written 'he broke down and cried like a man'? What would you have done with the copy?"

"I'd have let it run," he replied, "and the paper would have gotten lots of letters telling us we were crazy. We would have planted a

W. A. S. Douglas, soldier, columnist and war correspondent, entered the British army as a bugler boy at the age of fifteen and served in the final stages of the South African war. Since then he has participated in every major conflict, either as soldier or correspondent. He holds the distinction of winning a commission from the ranks in the regular armies of both the United States and Great Britain. Douglas covered World War II from its beginning in 1939, landing in Normandy on D-Day with the First Army and entering Paris with the First (French) Division of General Patton's Third Army. He was injured on the Atlantic coastal front in November, 1944.

thought-provoker and, finally, we would have had to publish a powerful editorial on why men smitten by grief should never be ashamed to cry. Why should they?"

During the past half-dozen war years I thought a lot about that long-gone conversation. I have come to realize that tears from the eyes of men, open tears unashamedly shed, have been more frequent of late than ever before. The reason, as Bill Moore put it in his telegram, is that they have had something to cry about.

I have seen Winston Churchill weep. The record is that he has done so many times—tears of grief which at the same time were tears of defiance. But the tears I saw in his eyes were those that fell on the reading desk as he addressed the Congress of the United States shortly after our entry into World War II. He reminded the legislators that his mother had been an American, and then he said that his cup would indeed have been full to overflowing had she lived to see him so honored by the country of her birth. Then two tears, no more, glistened under the shaggy eyebrows.

I have seen our only living ex-

President, Herbert Hoover, shed tears unashamedly—and the consensus among those who know Mr. Hoover is that he is not given to emotion. The scene was along the banks of the Mississippi during the flood disaster of 1927. Mr. Hoover, as Secretary of Commerce in the Coolidge cabinet, made a special trip down the great river to study the damage and to make recommendations. A village above Natchez had been obliterated. A boy in his teens was telling the Secretary how the angry waters had wiped out his parents' homestead, drowning all the family but himself. Mr. Hoover did not blink his tears away; he took out a handkerchief and openly wiped his eyes.

I saw General Smuts weep before the mighty men of the world—the mighty men of the 1918 Armistice and of shortly thereafter. This was in the Hall of Mirrors of the Palace of Versailles. Smuts wore the uniform of a British general; barely two decades previously he had been one of the leaders of his tiny South African nation in its war against the British Empire. The famous Boer soldier was pleading the cause of the little people

When President Roosevelt Wept

WALTER WINCHELL once saw President Franklin D. Roosevelt weep. It happened when ex-Congressman Lambertson and others were criticizing the war record of his sons. Mr. Roosevelt was miserable about a letter that came that morning from one of them. It concluded: "Pop, sometimes I really hope one of us gets killed so that maybe they'll stop picking on the rest of the family."

When he read it, F.D.R.'s lower lip started to quiver, and the tears came. "Will you please let me tell that Sunday night?" Winchell asked.

"No, you mustn't," the President said, and changed the subject.

(from *The Real FDR*—edited by Clark Kinnard, Citadel Press, New York, 1945)

of the world, just as he was again to plead their cause at San Francisco in 1945. I wasn't at San Francisco, but I saw Smuts' tears fall at Versailles.

As a boy-soldier in the British army, I was always impressed, along with my comrades, by the toughness of its then commander-in-chief, Lord Kitchener of Khartoum. You couldn't think of Kitchener in tears. I was too young to be at the Battle of Omdurman, in which Kitchener broke the power of the Mahdi in Lower Egypt, but my cousin, then a lieutenant in the Inniskilling Dragoons, followed the conqueror into Khartoum and always told how England's hardest-boiled soldier wept at the grave of "Chinese" Gordon, who had died defending the city and whose remains had lain there for fourteen years—unwept, unhonored, unsung, till Kitchener's tears fell.

I have seen the late General Patton weep while welcoming a new army, while bidding good-bye to an old one. Field Marshal Montgomery's tears fell unrestrained when the people of his native Ulster hailed him as the province's greatest living son. And I will never forget the tears of a fair-haired young man as he stared, almost unbelievingly, into the fearful squalor and misery of an unemployed Welsh miner's home. He was then Prince of Wales, soon to be, for a brief time, King Edward VIII of England.

"Something has got to be done!" he said as he stared at the whimpering, starved, barely clad children. Then his feelings got the better of him and the tears came freely.

During this last war I saw many

Tears as Microbe Killers

Sir Alexander Fleming, the English scientist, has proved that human tears are efficient microbe killers. This is due, says Sir Alexander, to the presence in tears of lysozyme. The medical dictionaries reveal that lysozyme is "a stable bacteriolytic substance (a destroyer of bacteria) present in animal and human secretions and tissues." Sir Alexander recently took a tear and with a dropper administered it to several million bacteria. Immediately the tear dissolved every microbe in the test tube.

men, young and old, in tears in France and in England, in tears here in train depots and near dock-sides. Some were tears of joy and some were tears of parting. In the Battle of Britain I often saw man-tears—of both grief and defiance—shed by many others besides Winston Churchill. And then, too, there was the frightened American boy in Normandy.

I was on Omaha Beach four hours after our initial landing on D-Day. We had not yet been able to operate armor, for the German 88's were knocking over our LST's with uncanny accuracy as they nosed into the beach. The sands were a litter of human and mechanical wreckage. I came upon a young sailor—not over twenty—from one of the smashed landing craft. He had got hold of a dead soldier's machine gun and was blazing away at the Germans.

As I came close I noticed that he was weeping noisily "What's the matter, son?" I asked as I sidled alongside. "Scared?"

I was scared, and I figured he

was too. "Scared, hell!" he shouted while the tears streamed down his cheeks and his gun rattled on. "I'm just worried sick about Ma. She'll hear about this mess and she'll figure I'm in it, and then she'll carry on terrible . . ."

That is the nearest instance I can recall to refute Bill Moore's generally correct theory that no men—even young men—can cry like mother-conscious babies. And yet, without any intention of belittling men to whose eyes tears come now and then, there is a somewhat lighter side to the fashion—one from which benefit may be derived. Many a distinguished physician has given it as his opinion that all of us should cry occasionally for our health's sake; and one eminent doctor at Johns Hopkins stated that the average male cries to himself about once every two years until he reaches senility. Then the tears come more easily.

This medical expert claimed that once every two years is not enough: that a good cry once a week—the average, I am told, for women—would do men a lot of good by bringing out the latent sympathy which those of us who consider ourselves strong, virile

and hard-boiled are at such pains to conceal. Surely there is something to be said for the theory.

Meanwhile, masculine tears will continue to fall, intermittently. Frazier Hunt, the correspondent, tells this story of Douglas MacArthur: "When the constant bombing of the Philippines appeared to MacArthur to be ruining the health of President Quezon, the General insisted that Quezon be taken to another island. Darkness had covered besieged Corregidor when the General half-carried the aging sick President to the gangplank, where the submarine awaited. Tears sprang to his eyes as he said good-bye. When the submarine disappeared, MacArthur returned sadly to his quarters, to wait for the help that would never come."

There was another incident in the Philippines. "I felt the tears welling up in my eyes," wrote General Jonathan Wainwright of the last salute he received from his starved and exhausted men before the Japs took him away from Corregidor.

Brave tears—of grief and of pride. What two better emotions could men indulge? And what better way to indulge them than the oldest way known to man?

Where Thieves Turn Salesmen!

ALMOST EVERY Chinese city has a Thieves' Market, like Chungking's Rusty Nail Street—or Kunming's Civilization Street. There, it is said, you can buy in the morning anything that was stolen from you the previous evening. Hundreds of used knick-knacks are spread out on the ground. With patience, you'll find anything you're looking for—from an old monocle to a slightly-used hot water bottle.

—JEFF SPARKS

Alfred Hitchcock, master of the mystery film, reveals how he weaves his web of horror and suspense



How To **CHILL** a Spine

by CAMERON SHIPP

A SMALL, ovoid-shaped British gentleman who resembles a middle-aged cherub is at this moment hatching up horrifying devices to scare you. He goes about this as cheerfully as a child on Christmas morning and as maliciously as a salesman palming off a haunted house.

Alfred Hitchcock is one of the few film directors whose name is as famous as the faces of his stars. There are, of course, other Hollywood experts who get astonishing performances from actors and astonishing effects with cameras, but hardly any of them can explain how he does it. Hitchcock, whose specialty is spinning suspense so tightly around unsuspecting screen characters that audiences find the tension unbearable, is not only articulate but blandly willing to reveal how he connives at frightfulness.

He says he lets the audience do all the work for him. "No matter how much the heroine is in danger, the audience is always relieved when she gets saved. In spite of the fact that there is no instance in

theatrical history of a girl having been cut in half by a circular saw or run over by a train after the villain has tied her to the tracks, the audience sighs with relief when it doesn't happen."

Take a look at Hitchcock's way with the cinema's most popular contribution to dramaturgy, the love scene, technically known as the clinch. Hitchcock is making *Notorious*, a spy thriller. His stars are Ingrid Bergman and Cary Grant, players of such calorific caliber that any other director would consider their passionate embrace a sacred moment.

Hitchcock has worked nights making pencil drawings of caresses and camera angles. But he breaks off the scene and cuts his camera to an office. There the audience learns that the secret agent who controls the destinies of Miss Bergman and Mr. Grant is going to compel Grant to make Ingrid give herself to another man. Instantly, we go back to the lovers. Nothing has changed with them. But the audience has changed. The audience knows something the actors don't

know, and feels that disaster is just around a dark corner. Suddenly the phone rings, and Hitchcock cuts the scene.

Execution of such scenes is like adjusting a split-second time bomb. It requires hours of night plotting, hundreds of sketches and dozens of rehearsals to turn commonplace sequences into surprises. Hitchcock is as resourceful as a spider, and as patient, too.

"You say to the audience, 'This man is going to murder that man, in a certain way.' You give the audience all the information you can. You play around with this information and make the audience wonder what is going to happen. The audience then begins to work for you, and wants to scream, 'Do it, for God's sake, do it!'

"People get emotional suspense out of creaking doors, yet you can get the same suspense in broad daylight simply by having someone say 'I am going to cut that woman's throat.' But naturally you don't let it happen immediately."

Hitchcock is also adept at all the wizardry a master technician can get out of a camera when he goes after what he calls "mysterioso." "You use moody lighting and let the camera hold on one person in lonely surroundings. Or you use long shots, not merely to prove that a room is large but to make it barren and lonely in an unconventional way. Or you can be tricky. In *Suspicion* I showed a glass of milk containing poison. I put an electric light in that glass to make it gleam murderously.

"I've just ended a picture with a revolver in a man's hand slowly turning and firing point-blank at

the audience. This was a dummy hand and revolver, actually about three feet long. The picture ends with the explosion, but not really, for customers go right on acting for me."

How much a director actually has to do with the success of a picture is a question that puzzles both lay and professional critics. Usually it is the producer who selects the story, assigns the writers, edits the script, casts the players, and superintends cutting the film. But from the moment a director takes over, he is supreme on the set.

Some talented directors often discard the script and shoot whatever comes into their heads from day to day. Hitchcock, who is his own producer, shoots what came into his head months ago. He improvises nothing. Every word, every dissolve, every camera angle, has been painstakingly plotted to get one sum total effect—suspense.

In starting a new screen play, Hitchcock presides primly on a straight-backed chair, hands folded neatly over his Buddha paunch, while his five-thousand-dollar-a-week writer, Ben Hecht, marches up and down like a man broadcasting from a walkie-talkie set. The conversations last for days. Hecht puts them into script form. Hitchcock then takes over and is the final editor.

He began work in motion pictures in London more than 25 years ago and his first chore was to draw titles for silent films. Quick skill with the pencil is one of his stand-bys today. When he comes on the set, he hands his cameraman drawings of every scene and camera

angle. There are no arguments and few discussions about how to shoot anything. Suspense builds as logically and swiftly as Einstein doing simple algebra.

Hitchcock pretends to despise actors. He calls them cattle. On long motor trips, his favorite recreation, he has snapshots taken of himself sneering at "Look Out For Cattle" signs, and mails prints to his favorite actors and actresses. But they admire him inordinately.

He discovered or made stars of Madeleine Carroll, Joan Fontaine, John Hodiak and Maureen O'Hara. He has a surprising method of putting them at ease. When Hodiak was working in his first big part and was too nervous to play, Hitchcock soothed him with: "What are you worried about? This is just another picture on which your whole future depends."

When directing a crowd of extras in a street scene, he instructs each man to walk as if he were going somewhere. Advising extras who were supposed to be patients in an insane asylum, he left them glaring suspiciously at each other with: "Just behave as you normally would." When a child interrupted one of his scenes, he thundered "Cut!" over the public address system and then, in a hoarse whispered aside (also amplified) instructed his assistant: "Destroy that child." Mother and child departed hurriedly.

Hitchcock cannot resist mystifying audiences even when he is not working. He likes to enter a crowded elevator and begin talking to a companion as if he were continuing a conversation. "I fumbled for the light and finally found

it, and there she was, lying on the *chaise longue* with her throat cut, poor darling. Without thinking, I touched her, leaving fingerprints, of course. I picked up the knife, and then reached for the phone. Well, as you know, I did not mind ruining her husband and taking a hundred thousand dollars from him, but it was somewhat embarrassing to be implicated in a murder —" He lets the story trail off as he leaves the elevator.

HITCHCOCK now weighs about 210 pounds, has weighed 300. It was formerly his habit to eat heavily and doze at the table after dinner, even when his guests were Carole Lombard, Clark Gable and Mr. and Mrs. Robert Montgomery. At David Selznick's house during a party, Mrs. Hitchcock found him asleep at ten o'clock. She awakened him. "Let's go home," she suggested. Hitchcock blinked. "It's much too early. That would be fearfully rude," he murmured, going back to sleep.

This is his favorite story, the picture he would like to make: there is pandemonium in the street, sirens, police whistles. An East Indian appears, pursued by the cops, and runs into a cathedral, where he climbs to the whispering gallery. The police are just about to close in when he leaps from the balcony, falling before the altar. Just then a great chandelier crashes from the ceiling and covers him.

When the East Indian is extricated, the police discover a curved dagger between his shoulder blades. Obviously, he could not have run far with the knife in his back. They are still mystified when one of

the policemen touches the man's copper-colored face and discovers that his skin is covered with dark make-up.

At this point, Hitchcock stops. Invariably a listener asks, "Then what?"

Hitchcock is dead-pan. "I don't know," he answers sadly. "That's why I haven't made the picture."

His predilection for suspense he explains by saying he is an orderly, law-abiding citizen. "Therefore, horror fascinates me. Mystery stories are essentially fair stories for adults. We escape into these ter-

rible predicaments of other persons, knowing all the time they aren't so, yet feeling intense relief when things turn out all right."

Hitchcock's next film will be a considerable surprise. He will make *Hamlet* as his first independent production, with Cary Grant. It will be a modern, psychological melodrama. "For the ghost, I'll probably use a Ouija board. And for the soliloquy, a psychiatrist's couch." If Shakespeare keeps in touch with Hollywood's doings, he's probably in suspense at this very moment.



The Pay-Off

BIG BUSINESS stepped through the door of a large eastern insurance company one afternoon during the early '20s when Narciso Arrellano, wealthy young Nicaraguan strolled in and said "I wish to have a million-dollar life insurance policy."

Medical examination satisfactory, character and business references minutely checked, the president himself phoned young Arrellano for an appointment. "Your application is approved. I personally will deliver the policy to you."

Some weeks later claims on the Arrellano policy complete with affidavits rocked the customary calm of the office. "It doesn't ring true," exclaimed the general manager. "A man becomes seasick, rushes to the ship's rail, falls overboard, and is drowned in the presence of six witnesses!"

"Accidental death means double indemnity too," sighed the president. "Two million dollars!"

"We must assign our ace investigator to this case immediately," decided

the worried chairman of the board.

Their Spanish-speaking detective arrived in Nicaragua and dispatched a prophetic report: "Arrellano family wealthy, influential owners of steamship line. Affidavit signers company employees."

The second message held hidden implication. "Have employed three American soldiers of fortune as guides for hunting trip in Central American jungle. Big game in sight."

Long anxious weeks passed without further news while officials debated the advisability of payment. Finally a cablegram arrived. "Narciso Arrellano alive and well. Located in cabin ninety miles from Managua. Despite frenzied resistance, placed wounded Arrellano under arrest."

Ironically, one of the free-lance hirings fired his pistol at Arrellano in self defense. The detective hurled a chair just in time to deflect the bullet which, had it found its mark, would have cost the company the tidy sum of two million dollars.

—DON HUBBARD

Here are a few simple hints to help you preserve the health and beauty of your skin

Some Things You Should Know About



SOAP

by HERBERT L. HERSCHEHOHN, M.D.

COLD WEATHER wages merciless war against your skin. There is nothing that can be done about the weather—but there are a few simple rules to observe which will keep your skin soft and smooth in spite of the icy winds which scrape it like sandpaper. Unless you use these defensive measures, you may find you have the kind of hands, legs and complexion enjoyed only by the Eskimos.

In order to visualize exactly what to do and how to do it, imagine that the top layer of your skin is similar to a house roof made of overlapping shingles. This safeguard of nature makes it almost impossible for anything to get in from the outside. As additional protection, the roof is painted with a chemical veneer which is slightly acid and manufactured by the sweat glands.

If you will just remember these two simple facts about your skin you are already on the way to preserving its natural beauty. Now all you have to do is start applying the following rules so that neither the shingle arrangement of the skin cells nor the acid veneer is needlessly disturbed.

Don't overwash. The American passion for cleanliness is one of the chief causes of "winter dermatitis." The veneer, or *acid mantle* as it is called by dermatologists, is removed

before a new one can be formed. One fact should be obvious. In winter we perspire much less than in other seasons. Hence the acid mantle is thinner and more easily washed off, a problem particularly vexing to housewives, food-handlers, dentists, soda clerks, laundresses and others who must keep their hands in water a great deal of the time.

Use soap wisely. Soap is the skin's best friend, but only when properly used. Soap works by first neutralizing the acid mantle and making the water "wetter" so that it can get into microscopic pores. It then emulsifies oil and dirt particles, lifting them out of hidden places to the surface, where they are washed away. Soap is also deadly to dangerous bacteria and viruses.

But just because the judicious use of soap can do much good, it does not follow that using it as frequently as possible is better. This is as illogical as saying that because a teaspoonful of medicine relieves a cough, swallowing the whole bottle will cure pneumonia.

Too much soap keeps the skin's acidity neutralized and macerates the cells. Unfortunately, this gives the skin a satiny feeling which invites use of more soap. The softness should serve as a warning that the skin cells are swelling and that the final result will be a dry, cracked

surface which, instead of repelling germs, actually permits their invasion.

In cold weather, soap should be used only when necessary for actual cleansing, not when an ordinary rinsing will do. Only those brands of soap should be used which personal experience, not advertisements, prove to be gentlest. A ten-cent bar may be far better than a fancy fifty-cent creation.

Abrasive soaps should be avoided in winter. If the abrasive quality is necessary for particularly soiled hands, pour a little cornmeal on your hands and mix it with the lather. This will take care of grimy hands, as mechanics in industry have long known.

In instances where it is imperative to use soap frequently, there are soap substitutes containing no alkalines or abrasives. Although they do not lather, they do emulsify the soiled skin. Girl war-workers learned simple ways to keep their hands presentable. After the usual soap-and-water washing, many used a vinegar or lemon rinse, neutralizing soapy alkalinity and temporarily giving the skin an acid reaction until the natural mantle could be reformed.

If you have an unusually oily skin or an unusually dry skin, the best procedure is to consult a competent physician. He will determine the causes for either condition and advise you on the best method of skin treatment for your particular case. Remember, a dry skin may be the result of some glandular disturbance which requires medical care.

Wash before retiring. Although we customarily wash in the morning so as to look our best all day, this is

not wise winter routine. Such washing, usually done in a hurry so that we can get to work on time, is not thorough, the rinsing is not complete and the drying far from adequate. Thus your skin is defenseless against cold.

Your washing, bathing or showering routine should be switched from morning to night, preferably before retiring. There being no need for hurry, the ritual becomes a leisurely pleasure and the skin, instead of suffering, is fortified to withstand a blizzard the following day. Because it takes time for a new acid film to form after washing, the renewal takes place while you are asleep, so that by morning only a tepid rinse is needed as a refresher.

Dry your skin thoroughly but gently. Proper drying is an art. Done too lightly or carelessly, moisture causes painful chapping. Done too vigorously, the cell arrangement of the skin is disturbed. For a safe, fool-proof method, first use a washcloth to remove surplus water from the skin, wringing it out repeatedly. Then, with a large soft turkish towel, rub or pat the skin gently to remove whatever moisture may remain.

Avoid hot and cold water. If water is too cold, it requires too much rubbing for adequate cleansing, does not allow the soap to work properly or permit complete rinsing. If water is too hot, it macerates the top layer of skin, dissolves the acid film and intensifies those qualities of soap which are not desirable.

Warm water at comfortable temperature is best. It should be used in a basin so that the heat may be controlled accurately, rather than

subject to the extremes of hot and cold water running from separate faucets.

Special hand care. Because hands receive more punishment in winter, they must be protected from naked exposure with woolen or fur-lined gloves. In very cold weather, loose fitting mittens are more comfortable and protective. Before leaving the house in the morning, give your hands added protection by applying a slightly acid soothing

cream, such as the brushless shaving products. If a hand lotion is preferred, choose it with care. Here again, rely on personal experience rather than advertisements.

By observing common-sense winter precautions for your skin, just as you observe common-sense winter rules for your house and your car, you'll safeguard health and comfort. The basic rule to remember is this: don't fear soap—just use it wisely.

Helping Hobbies



WHEN Mrs. Sadie Reddekopp of Dallas, Oregon, discovered a long-haired black animal with a prominent white V on its back under her barn, her reaction was the natural one. She made tracks!

But today she has a business which might be called Skunk, Incorporated.

It started when several little baby skunks poked their heads out from under the barn, sniffing for dinner and their departed mama. To Mrs. Reddekopp they were irresistible.

It occurred to her that other people would love them too. An obliging vet was willing to cooperate. First the babies were given a sleeping pill, then a slit was cut just below the tail and the two spongy musk sacks on either side were pulled out.

Half-hesitantly, Mrs. Reddekopp put a small ad in the Dallas paper, offering deodorized baby skunks at ten dollars each—and then things began to happen. Other newspapers picked it up. Visitors, phone calls and letters began coming from all over the country and almost overnight all but one of the baby skunks were bought. Then the Coast Guard moved in, and even that one had to go.

—M. P. REA



MANUFACTURING his own good luck grew out of a hobby. Charles Daniels, telephone engineer of Balboa Heights, Panama Canal, started to experiment with ordinary clover ten years ago.

Now, after ten years of patient effort he has perfected a variety that 99 times out of a hundred, bears nothing but four leaves to the stem.

In 1940 Mr. Daniels' harvest of six million four-leaf clovers grossed him forty thousand dollars.

When Mr. Daniels first embarked on this hobby, he had no intention of commercializing it. Then a friend of his left on a trip concerning an important business deal. He remarked that he needed all the luck he could get. Mr. Daniels promptly sent him one of his four-leaf plants. The business deal was successful, and this was the beginning of the idea.

The largest order Mr. Daniels has sold to date was for a million leaves. The insurance company which bought them encased them in transparent celluloid calendars, fittingly inscribed "For Luck—Four-Leaf Clovers. For Protection—The Traveler's."

—LUCILLE H. BECKHART

Years of hard work

made a shining dream come true



One American Family

by JIM KJELGAARD

I WAS TEN years old when the Crimmons family came to live on the old Ammon farm at the lower end of town. Our town was not exactly bubbling with wealth, but the Ammon place was located in what we liked to refer to as the "poor district." It housed a lot of people who never seemed to do much of anything except fool around. In common with all the other town kids, we were warned to stay away from the lower end. There was no telling what might happen if we went there.

But the lower end had its attractions. For one thing, the creek in that section meandered out into the willows to form a swamp. Pheasants lived there, and I got one or two whenever I went hunting. If ringnecks weren't in season, there were bass in the deep pools that dotted the swamp. I was fishing for bass when the Crimmons family moved in.

There was nothing spectacular or dramatic about their arrival. Their haywire truck just pulled up in front of the deserted Ammon house. A few kids jumped out and I looked

casually at Mr. and Mrs. Crimmons. We found out later their real name was Dugash and that they changed it because Crimmons seemed more American.

Mr. Crimmons was a medium-sized, moustached man in overalls. His wife was tall and gaunt, and when I looked through the willows at her, her face reminded me of a horse. Hard work and lack of care had made the skin recede so that the cheek bones stood out.

I went on with my fishing, pretending to notice nothing. Then I heard the bushes rustle, and saw a stocky, sober-faced kid about my own age standing shyly beside the swamp stream.

"Hi," he said.

"Hi," I answered.

"My name," he said, "is Alfred Crimmons."

I looked coldly at him—I was very critical of other people at the age of ten—and inquired inanely: "Did you just move in?"

"Yes," he said proudly. "We bought this farm."

As far as I could see, there was no reason to brag about it. Like

everyone else, I knew they had been cheated if they'd paid more than six hundred dollars for the house, barn and ninety acres. But I didn't say anything except: "How many in your family?"

"My brothers Draja, John, Joseph, myself, our parents, and my sister Marie."

"Draja?" I asked. In a place where everyone was named Tom, Don, Bob or Dick, that was outstanding. But Alfred Crimmons just squirmed a little.

"Mother wouldn't change one name," he said apologetically. "Well, I got to go and help my family. Everyone must work, you know . . ."

AFTER SOME little time and some talk, the Crimmons family settled down to become part of our town. Nobody ever denied that they were hard workers and minded their own business. Though they had arrived in June, before the autumn frosts they had harvested a fine garden and somehow had managed to buy a couple of cows. They sold vegetables and butter, and I used to go there with my father to buy their produce. It was better than what anyone else had to offer, and cheaper. That made the storekeepers mad. But neither the storekeepers'—nor anyone else's—opinion ever bothered the Crimmonses. All they ever seemed to think of was work.

I used to get up at dawn and walk to the creek to be on hand when the bass were hitting best. I'd pass the Ammon farm, and Mrs. Crimmons and one or two of the kids would be out hoeing the garden. If he wasn't milking the cows

or cutting hay or fixing something, Mr. Crimmons would be helping them. Nobody ever worked harder or had less fun, yet with all their work the whole Crimmons family earned just about the three dollars a day paid to a section hand on the local railroad.

But that was all they needed. Neither Mr. nor Mrs. Crimmons ever left the farm. When they wanted anything, one of the kids would go uptown and buy a nickel's worth of salt or a couple of yards of cloth. Their total expenditure could not have been more than a couple of dollars a week, and all the rest of their living they took out of the old, run-down farm.

But none of the kids ever missed a day at school. Alfred was in my class, and he used to dress in old patched clothing that nobody but a Crimmons would have worn. He kept to himself, too, except when school let out. Then he'd wait for his brothers and sister, and they'd go home together.

All of them earned fair marks. But none ever mixed with the rest of us. Everybody knew the reason the Crimmons kids didn't attend parties or picnics was that they didn't have the money. Even if everybody was supposed to bring only five cents, the Crimmonses weren't there because they couldn't spare that much.

Their parents contributed a lot to the fact that they were social outcasts. Mr. Crimmons talked broken English, and when somebody spoke to him he seldom answered. As the years went by, Mrs. Crimmons became even more horse-faced. Four years after they moved to our village, she died. The local

paper gave her a whole column. The community, it said, was shocked by her death. It related her history: she had been born in Jugoslavia, moved to New York, and finally to the old Ammon farm.

Of course nobody was shocked—that is, nobody except the kids, and they didn't show it. When he came to school after his mother's funeral, Alfred just buried his nose a little deeper in his books. That night, as always, the Crimmons kids waited outside for each other and went home together. There was talk in town of taking them from their father and sending them to an orphanage, but nothing ever came of it.

Mr. Crimmons and the kids just stayed on the farm, working as usual and spending almost nothing. It was well-known around town that they had money salted away because they never spent any. Then Draja, the oldest, graduated from high school and dropped out of sight. It wasn't until the next autumn that another member of the class came back from State College to say that Draja was there. He was not earning his tuition and expenses, like many students, but was giving all his time to electrical engineering. It was then that we began to realize how old man Crimmons was using the money for which his family had worked so hard. He wanted his kids to have a college education.

That is when the attitude of our village changed. You didn't notice it much, but the Crimmonses were no longer looked upon as queer folk who lived in a ramshackle house. They were people like the rest of us. Yet it still made no difference

to the Crimmons family. They went on living the same as ever, working from dawn to dark.

One by one the rest of the kids—John, Joseph, Alfred and Marie—graduated with honors and went away. Nobody knew exactly where they had gone, but it was reported that the boys were all in one college or another and Marie was a student nurse. Then, about five years after she left, old man Crimmons died.

There wasn't anything spectacular about his death. He just wasn't noticed about the farm for a day. His cows—he had eight by this time—were owing to be milked. Somebody walked into the house and there he lay dead. That's all there was to it.

But somehow his funeral was different from that of his wife. Old man Crimmons unconsciously had become part of the community. For one thing he had sent five children through college, and that was a lot more than some of the more well-to-do citizens could boast of. Everybody felt genuinely sorry that he was gone, and said what a fine man he was, and a lot of people went to his funeral. I was one of them.

OLD MAN Crimmons lay in his casket in the room where he had died. There was no nobility or serenity about him; even in death he was only a medium-sized, dried-up man whose face was wrinkled and whose hands were gnarled. He seemed the perfect example of futility. He had given his whole life to unrelenting toil. In death he had found only oblivion.

All the kids, Draja, John, Joe and Alfred, were there. Marie came

clinging to the arm of the Army major who was her husband. But if looks could have killed, all of them would have been dead. You could tell by the big shiny cars they were driving that they were doing very well. The village resented the fact that they had left their father to his life of sweat and toil when, obviously, they could have made things easier for him.

But, as always, the Crimmons kids seemed unmindful of what the town thought. They were polite enough, and followed the hearse to the cemetery in their cars. Old man Crimmons was lowered, and the kids heaped flowers over his grave. It was the usual small-town funeral, and when it was over everyone left the cemetery.

That night I took a walk past the old Ammon farm. All the cars except one were gone, and I was opposite the house when I noticed a cigarette glowing on the porch. Somebody said: "Hi."

"Hi," I answered.

I knew it was Alfred Crimmons, and I thought back to the day when I had first met him. Things seemed not to have changed much.

"Come on over," he invited.

I joined him on the porch, and he offered me a cigarette. For a moment we puffed in silence. Then, as though he had to offer an explanation, he said:

"All of us asked him to come away. He wouldn't do it. He said he wanted to die here, in the place where he had found his greatest happiness."

"Here?" I asked, wondering how anyone could find anything but misery on the old Ammon farm.

"Yes," Alfred said softly. "Here, where you and all the other townspeople think he spent his life in hopeless grubbing. He was born a Polish peasant, and was drawn to America by a wonderful dream. But he was forty years old when he came, and as soon as he knew that the dream could not come true for himself, he found what he considered a priceless asset."

"What asset?"

"Five kids," Alfred said, still softly. "Five kids who could make his dream come true for him . . . He wasn't my father. He met my mother and us in a New York tenement where he roomed, and brought us all here a week after she married him."

Million Dollar Idea



A N IMAGINATIVE chap in Boston who had bought a quantity of porcupines at two dollars a barrel conceived the idea of attaching a quill to the top of a small card which bore a picture of the spiny animal. Beneath it were the words: "The porcupine is the best protected animal in the woods; if he came to the city and saw so many people without accident insurance protection, he would laugh himself to death."

The inventor sold a quarter of a million of the novelties to an accident insurance company.

—HENRY CRAGIN WALKER

In the little villages and in the big cities, democracy speaks the same language

Cracker-Barrel Forum

by DAVID LOUIS

IN THIS post-war, atomic era, perhaps we have begun to shy away from the precious right of open forum and free debate. Perhaps we have begun to believe that the democratic process has become too complicated for our poor minds to understand. Perhaps, we say, the true language of democracy is a mumbling of double talk which only the professional politicians can voice and comprehend.

But what is the basis of our American democracy? Where is it conceived? Where is it born?

It begins wherever citizens gather to discuss and debate. It begins on the street corner, in the familiar living room, on the soap box in the public park, around the old wood stove in the village store.

It begins wherever you hear the voices of Americans arguing, agreeing, quarreling, over the rights of man, the school board, the increase in taxes, the price of pickles. In the voice of one American standing up for himself is the beginning of the democratic process. . . .

Now you lissen to me, Hank. This is a peaceable country but each one of us has got a weapon t' fight with. Call it yer vote on election day. Call it the sound o' yer own voice fightin' fer what you think is fair. That's yer weapon. That's what we fight with

Another in a series of stories and pictures devoted to familiar scenes in American life.

in a peaceable country. You think you ain't done right by, so you open yer mouth 'n holler t' almighty heaven. That's yer right in a democracy. But you gotta lissen t' the other feller too. Now . . . what was that you was beefin' about?

In the marble halls where laws are made, they talk the jargon of the *status quo* and the *corpus juris*. The more we hear of it the more it sounds like Greek. So we have been letting the politicians do more and more of our talking for us, and, inevitably, more and more of our thinking.

But the plain fact is that democracy is the language we have been talking in this nation for two centuries. The hard, imperishable core of it is the free talk of free citizens in a free place.

The sound of our voices in the little places is picked up by the searching wind, echoed by the multitudes, and borne with irresistible force into the marble halls.

So dig in—get back to the old cracker barrel, to the old wood stove in the general store. From this vantage point, where the give-and-take of free speech is the inalienable right of all men, add your questing, reasoning, clear hard voice to the great chorus of American democracy.





The Country Store

PAINTING BY ALBERT DORNE

The wood stove and cracker barrel, familiar to millions who grew up in village and farm, are immortalized in this painting by a gifted artist.



These French dueling pistols, painted for Coronet by Melbourne Brindle, were made by a gunmaker of Paris in 1812. They are now part of the collection of Albert Foster, Jr., of South Orange, N. J.

Good-bye to the Field of Honor

by ANTHONY PARKE

NOT SO MANY years ago, the code duello was a beautifully packaged American commodity, resting on the soft padding of tradition, wrapped in the glossy trappings of ancient rules and ceremonies. Men of fame and distinction were killed or maimed on the field of honor. Women dueled with sword and gun. Clergymen and congressmen went armed, ready to be challenged. Even children killed each other on the dueling ground. "Man is a fighting animal," people said.

"You can't change human nature."

Weapons included pistols, pistols with bayonets attached, swords, clubs, bowie knives, sabers and shot-guns. In the pre-Civil War South, some of the leading gentry grew talon-long fingernails for gouging out opponents' eyes.

In 1818 John M. McCarty challenged his cousin, U. S. Senator Armistead Mason. McCarty's conditions of combat, in order of suggestion, were: a plunge from the Capitol dome in Washington, com-

bat with firearms while sitting on a barrel of gunpowder, hand-to-hand encounter with dirks, or the use of muskets loaded with buckshot at ten feet. The duel was finally fought at a distance of twelve feet with one musket ball substituted for the buckshot. The Virginia Senator, to quote a contemporary, was "blown to pieces."

Perhaps the most foolish duel ever fought in America, in that it endangered the lives of two able men whom the country could not afford to lose, involved Secretary of State Henry Clay and Senator John Randolph of Virginia in 1826. The fiery Randolph had delivered a bitter political attack on Clay, and Clay challenged. Friends tried to prevent the duel, but Clay demanded satisfaction. Randolph, who did not want to fight his friend, accepted the challenge yet swore that he would not return Clay's fire.

The duel took place in Virginia, Randolph having insisted that if he were struck down he wanted to die on native soil. He changed his mind about firing, but aimed at the ground. In the exchange of shots, neither was hit and Thomas Hart Benton, Missouri senator and a mutual friend, tried to end the matter there.

Clay refused, and in the second exchange Randolph fired in the air. But Clay's bullet penetrated the folds of Randolph's cloak.

"You owe me a coat, Mr. Clay!" Randolph said.

Clay, brought to his senses, re-

plied, "I am glad the debt is no greater." The two then met half-way and shook hands.

Andrew Jackson, victor of the Battle of New Orleans and later President of the United States, was a notorious hothead. A political opponent once published a list of 103 "duels, fights and altercations" in which he shared. Many of them were in defense of his wife's reputation, for they had married when Mrs. Jackson was still the wife of another man, and after the story got out Jackson announced he would challenge any man who repeated it.

When he heard that Charles Dickinson, a dead-shot, had disparaged his wife, Jackson challenged. At the meeting Jackson held his fire, hoping that Dickinson's quick shot would not strike a vital spot. Old Hickory had furthered his chance for safety by clothing his lank body in loose garments, calculated to impede the progress of the bullet or deflect its aim.

The deception worked. Though Jackson was painfully wounded, he had plenty of time to aim carefully at the dumfounded Dickinson, and shot his opponent through the heart. Afterward Jackson expressed great satisfaction that the best shot in the state of Tennessee had died thinking he had missed an easy target.

Even Abraham Lincoln once found himself involved in a challenge. Long before he became a national figure he wrote a humor-



ous letter to the Sangamo *Journal*. Signed "Rebecca," the letter poked gentle fun at James Shields, a lawyer of opposite political views. Later Lincoln confided his secret to Mary Todd, who wrote other letters under the same signature. Unfortunately her missives lacked Lincoln's subtlety, and the infuriated Shields demanded that the editor reveal "Rebecca's" identity or accept a challenge.

Endangering not only his life but his literary reputation, Lincoln assumed responsibility for all the letters, and was invited to name his weapon. He chose the broadsword, a wicked looking saber almost as large as his opponent.

When the two adversaries met on the dueling grounds, Lincoln unfolded his lanky height and casually snipped off the highest twig in sight. Then with a warm grin he offered a game of "old sledge" as an alternative to the duel. The two men shook hands and became fast friends.

Mark Twain, in the days when he was better known as Sam Clemens, got involved in a controversy with an editor who was a crack shot. A miserable marksman himself, the humorist was taking some last-minute pistol practice when his second, an able shooter, clipped off a bird's head at an almost incredible distance.

"Who did that?" demanded the editor in amazement.

Twain quickly nudged his second. "Sam Clemens did," said the second.

Protesting that Twain was a dead shot, his adversary called off the duel as unfair. At which Mark Twain heaved a sigh of relief,

loosed a roar of laughter, then made a hasty exit.

After the historic duel in which Aaron Burr killed Alexander Hamilton, public indignation against the code duello reached a new high. Yet the practice continued to thrive, particularly among Army and Navy officers. It was not until 1862, however, that the Navy banned dueling, subjecting any challenger to court-martial. Sporadic state legislation was also enacted against the duello, but by this time the practice had spread to California, then virtually a lawless territory. Dueling remained a ranking sport there until Governor Leland Stanford secured stiff legislation against it, with prison terms for offenders.

IN THE South and Southwest the duel degenerated into brawling savagery, and thus prepared its own doom. Newspaper editors were challenged almost every time a new edition appeared, it being recorded that six editors of the Vicksburg *Sentinel* were killed or wounded in duels. In Natchez two men were killed and several wounded when the seconds began quarreling after the main event ended. Twelve men were involved in this fracas, including the celebrated Col. James Bowie, inventor of the knife bearing his name.

One newspaper editor, Joseph Bryan of Richmond, Virginia, was challenged to a duel in 1893 by a member of the Richmond Democratic Committee. But Bryan rejected the challenge in the columns of his paper, explaining that his religious convictions and his common sense compelled him to do so.

He turned the matter over to the Richmond police chief, who put the politician under bond to keep the peace.

South Carolina, which once had boasted several dueling societies, was the scene of a duel in 1878 that probably brought the South to its senses. Col. E. B. C. Cash and William Shannon, both leading citizens, dueled and Shannon was killed. The State Legislature speedily enacted an anti-dueling law that had been lying around for years. The law provided that any man who sent, accepted or carried

a challenge would be debarred from voting or holding office. Other states soon took similar action, and today in all states any duel is a misdemeanor, as is sending a challenge or provoking one.

In retrospect, it was probably the ridicule of a growing nation that eliminated dueling, rather than laws. American men learned to weigh their own follies and to settle differences amicably. By thus exercising their common sense, they permanently discarded the code duello in favor of the code of democracy.

Drama in the Ant World



Ants comfort and solace a bewildering horde of fantastic guests: beetles, spiders, millipods, crickets, termites, even roaches!

Indeed, practically every nest of the red-brown Myrmica ant entertains little yellow ants as house guests who live off the bounty of their more industrious hosts.

Horned beetles live almost altogether in ants' nests while exuding a volatile substance the ants love. If the beetles attempt to escape from the home, the ants rush forth and drag them back.

Golden-haired red beetles with reddish, oily bodies are carried upon the backs of loving ants, and are rarely allowed to touch ground.

A few caterpillars too live out their babyhood among ants. Ants wait upon the greenish, whitish, or pinkish larvae of Azure butterflies, stroke them with their antennae, drink sweet fluid from the caterpillar-backs; and discover in time that they have harbored potential great soft-winged blue angels.

—J. E. HARRIS



The quick thinking of Mrs. Gunnard Turnquist of Pontiac, Michigan, saved her home from an invasion of black ants. Millions of them. They advanced like soldiers in a column six inches wide and thirty feet long.

Mrs. Turnquist was working in her kitchen when she chanced to look out the back door. Her jaw dropped. Screaming, the amazed housekeeper grabbed a broom and attacked the mass as it mounted the back steps and headed into the house. But still the creatures came swarming up the handle of the broom. She tried arsenate of lead in her garden spray. The invading horde kept on coming.

Finally, she thought of wartime flame throwing tactics. She ducked down into the cellar and came up with a blowtorch, which she turned on the invaders.

After more than an hour and a half, Mrs. Turnquist had cleared her home of the army of ants. Estimated enemy killed in action—forty thousand.

—W. E. GOLDEN

Courage and imagination can overcome tremendous odds in the battle against disability

How the HANDICAPPED Fight Back

by DOLPH SHARP

IT'S HARD to call them an army. Mostly they're civilian one-man outfits, fighting private wars and retooling weapons out of their own heads. Yet the inventive handicap-fighters have a common aim: to function normally through a common method of attack. The victories they have won offer an inspiring example not only to other handicapped men and women but to thousands of returning veterans who have lost normal mobility due to war wounds or injuries.

For months after his car overturned, Lloyd Burch's life hung by threads—the unsevered nerves in his fractured spine. He lived, but he would never walk. Burch was depressed: an engineer flat on his back was of little use. Then he gambled on a long-shot operation. It was successful and he could sit up. Then he attacked the problem of how a man without use of his legs could get around by himself.

By the time he returned home he had several ideas. Building a pipe superstructure over his bed, he learned to hoist himself, swing into a wheelchair, navigate down a



ramp. He substituted hand controls for the chair's clutch, starter and brake. With his folding wheelchair, he was soon getting around as well as ever.

When the city of Tucson needed an engineer, Burch proved he could hold the job. When an instructor shortage held up a local naval cadet training program, Burch wheeled his chair into the classroom and taught hundreds of embryo officers. Simple gadgets—a pipe structure, altered controls—but they were adequate weapons in Burch's fight for a worthwhile and productive life.

Just what propels a man to turn inventive in combating physical helplessness? It is the man's total personality. An embittered man with a slight disability has less chance of readjustment than a seriously handicapped man with fighting spirit.

James Emerson was a school principal until arthritis sent him to Tucson, flat on his back, weighing only 54 pounds. Regaining a little movement, he decided the trading business might be within his powers.

Well-meaning friends said an invalid should suffer in bed. Their warnings sent him back to a rest home, sick with fear. Then, his mind made up again, he moved into a trailer.

Today his bed is a control center: a green string opens his door to visitors, a red one switches lights on, a white string operates the radio, a blue one hauls in a pencil-and-idea notebook, a yellow string pulls a cart containing clothing from under the bed. Alongside stands a double-decked revolving table with sliding shelves. Contents of a closet are in labeled sacks on reachable cords. A "lazy tongs" reaches out for other objects.

Above the bed hangs a dog leash which Emerson uses to hoist himself in and out. A kitchen chair on rollers moves easily in a space too small for a normal wheelchair. Outside, on the door-level platform, another wheelchair shuttles him to his car. At traffic intersections, a double-face mirror supplies the movement his neck lacks.

Inventions? Weapons? They've helped Emerson to handle deals involving thousands of dollars and given him an interesting, independent life.

But it doesn't take a school principal to muster imagination. Henry Hatter, uneducated blacksmith's helper, lost a hand in a shotgun accident. Although he had never seen an artificial limb, working with one hand and a few tools he built a "hand-made hand" of wood, leather and wire so efficient that the Oklahoma Rehabilitation Service sent him to Tuskegee Institute, where he fashioned an aluminum duplicate that can pick up a dime

or carry a half-bushel of coal.

A doctor, bedridden with tuberculosis, his spark of life dependent upon strictest conservation of energy, devised a method of suspending a typewriter over his bed and, moving only his fingers, slowly wrote an authoritative book on the illness which had crippled him.

A man with paralyzed arms had a fountain-pen holder shaped from a rubber ring which he could grip between his teeth. Wearing close-focusing glasses he was soon writing legible messages. Thus encouraged, he learned to leg-typewrite with rubber-tipped metal prongs strapped to his knees and stirruped to his feet.

AFTER YOU'VE met a half-dozen handicap-fighters, you begin to see similarities in their weapons. This, if nothing else, should unify the separate fighters into a coordinated army in which one man's victory serves another. Sometimes, however, individual complications demand an individual attack.

Lloyd Burch learned to swing his useless legs into a wheelchair, but Burch had use of his hands. Charles Lee's hands were useless and his wife was too slight to lift him. His "Lee Lifter" utilized the power-multiplying principle of the lever. After Lee got the crutch-like ends of parallel levers under his arms, his wife gently raised him out of bed, swung the lifter around, lowered him into his wheelchair.

Lee, incidentally, is a handicap-fighter with engineering experience, but he sees improvisation as a problem in strategy. "If you completely give up some function, you're scared and likely to retreat some more.

But if you figure out a way to fight back, it's only your depression that does the retreating. What more important battle is there than the one to get along?"

Don't think, however, that the handicap-fighters are advocates of all-work-and-no-play. John Harker didn't see why the loss of an arm in World War I should keep him from fishing, so he designed a wooden plate with socket and steel pole-holder to be strapped across his stomach. When he has a bite he simply plugs in his rod and spins the reel.

A man who wasn't going to surrender his crown of checker champion when he lost his sight designed a board in which the "red" squares were depressed, the "red" men were square, and the undersides of all counters bore indented crowns. This "feel" checker board has also been adapted to chess.

Sometimes a new gadget produces a new career. Edward Gerlach, machine-tool designer, was forced out of work by blindness. Realizing the number of skilled men kept idle by lost vision, he spent years perfecting a feeling-clicking attachment to the micrometer, accurate to .0005 of an inch.

Once quantity production is under way, Gerlach's "weapon" will return blinded machinists to old jobs and open new jobs for others.

Occasionally the same gadget serves different disabilities. A blind man, by affixing a small wheel to the end of his cane, gained antenna-like sensitivity in ascertaining whether he was approaching grass, gravel, concrete or rug. An ordinary cane proved back-tiring to a crippled girl until she put a wheel on the end of it.

Get-along gadgets ought to be easy for GIs who, on the fighting fronts, turned gasoline drums into stoves, refrigerators, beer coolers and washing machines; who improvised lamps out of old *vino* bottles and potato mashers from outboard motors. One veteran of World War II who learned to do everything with artificial hands except turn the pages of his job rate-book solved this problem by using a magnetized pencil and metal-tabbed pages.

Civilian handicap-fighters who have been turning out ingenious tools can expect new help from GI inventors as the servicemen take off their regulation pajamas and come out of military hospitals.

Tall Tales

AN NORTHERNER seeking an ideal Southern town stopped at a small hamlet and asked an old mountaineer if the place was healthy. "Healthy?" the man roared. "Why, this is the gol' darn healthiest place you ever did see. Shucks, nobody ever dies in these parts."

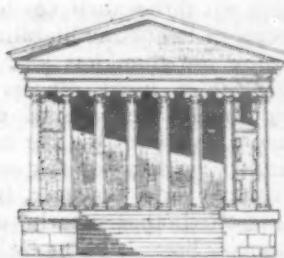
"That's strange," the Northerner remarked. "On my way into town I passed a funeral procession."

"Oh, that," the mountaineer grunted. "That was only the local undertaker. The fool starved to death."

—REESE HART

As Secretary of the Treasury, Fred M. Vinson is tackling his toughest government assignment

Super-Billion Dollar Secretary



by BASCOM N. TIMMONS

WHEN FRED M. Vinson, long-nosed, shaggy-browed, 200-pound Kentuckian, was sworn in last summer as the 53rd Secretary of the Treasury, it was the fanciest occasion of its kind in many years.

The ceremony took place in the House Ways and Means Committee room at the Capitol. Old associates from the legislative, executive and judicial branches of the government, personal friends and admirers filled the spacious room. Congressional cronies made flowery speeches for the man who in three months had held three of the most important jobs in Washington.

Vinson was leaving his post as Director of the Office of War Mobilization and Reconversion where he was known as "Assistant President of the United States." Admittedly he was vacating a turbulent job for what appeared to be a cloistered one. Someone remarked that Vinson should be congratulated. Replied a sage old friend:

"Except that he is getting an unusual opportunity for public service, Fred doesn't rate congratulations. Coming in on the honey-

moon of the Truman Administration, everything is lovely now. But life for him will really begin in '46. He's the 53rd man on a hot spot."

The prophecy is being borne out as 1946 gets well under way and fiscal problems pile up. The popular conception of a good Secretary of the Treasury is of a man who is astute enough to extract the golden egg necessary to run our huge government and still keep the goose in robust health. The extraction is through taxation.

"Taxation," Vinson once said, "is somewhat like the sulphur and molasses our parents used to give us. Everyone admitted that it was a highly beneficial elixir—for someone else to take."

Vinson occupies both a key spot and a hot spot—yet he has never shunned tough tasks. He was on a hot spot when his money ran out while he was at Centre College in Kentucky. He got off that one by teaching mathematics at night, tutoring, working in a law library and playing baseball. He was in a tough spot in 1943 when, holding a lifetime appointment to the Circuit

Court of Appeals for the District of Columbia, a bench just below the U. S. Supreme Court, he was asked to give up this security to become Director of Economic Stabilization. He took the thankless job.

Our chief fiscal officers have never found the task of getting money enough to run the government an easy or a popular one. On the sunnier side, however, it must be recorded that nearly all, in retrospect, have been looked upon by their fellow citizens as able public servants.

Alexander Hamilton, our renowned first Secretary of the Treasury, failed by almost three million dollars to raise sufficient revenues to meet expenditures during his incumbency. Albert Gallatin was on his way to eliminating the public debt until the War of 1812 sent it skyrocketing.

We are accustomed to thinking of Secretaries of the Treasury as wealthy men. Most of them have been. One, Andrew Mellon, who served under Harding, Coolidge and Hoover, was staggeringly rich—the wealthiest man ever to hold public office. Under his guidance the public debt was reduced from its post-war peak of 24 billion to 16 billion. But his eminence waned as Depression struck the nation.

Just as Mellon came in to handle the huge debt left by World War I, so Vinson must wrestle with the vastly bigger debt left by World War II. Unlike Mellon, Vinson's fifteen thousand dollars a year is perhaps the largest income he ever received. Also unlike Mellon, Vinson is a politician.

Born 56 years ago in Louisa, Kentucky, he observed courthouse

politics as a scrawny lad, and hardly was the paint dry on his law shingle when he had entered politics in his own behalf, first as city attorney and then as Commonwealth attorney.

Elected to Congress in 1922, his chief training ground for his present Treasury job was the Ways and Means Committee, the tax originating body of Congress. He was slowly mounting the Congressional ladder when the Hoover-Smith presidential campaign came along. Smith's nomination had splintered the Democratic Party in Kentucky, and Vinson was told that if he would give Smith merely nominal support, he could win re-election to Congress. He rejected the advice and campaigned for Smith. Defeated in the Hoover landslide, he came back to win in 1930.

BACK IN CONGRESS, he began to attack Republican tax bills, meanwhile sponsoring the withholding tax plan years before Congress adopted it. But by 1938 Vinson had found that a ten thousand dollar a year Congressional salary and a race for re-election every two years was no financial featherbed. Then came his chance for appointment to the Circuit Court with a salary of 12,500 dollars a year. Vinson snapped it up. The appointment was pleasing, too, for beautiful Roberta Vinson, who had come to Washington as a bride when he was a rookie Congressman.

When asked to take the post of wartime Economic Stabilizer, Vinson, who had never suffered an acute case of indecision, gave up his lifetime berth and accepted. His job was to hold the line against

inflation and he did a pretty good job of it.

From that he moved into the post of Federal Loan Administrator, succeeding Jesse Jones. A month later he followed James F. Byrnes as Director of War Mobilization and Reconversion. By now the man who had played only one position in Capital baseball was becoming known as a government utility man. Less than four months later he succeeded Henry Morgenthau as Secretary of the Treasury.

Vinson now has the job of gathering taxes from millions of individuals and hundreds of thousands of corporations, of managing the huge public debt and recommending the interest rate to be paid on it, of managing our international monetary relations, our domestic credit and the money supply. Also, he must administer the sprawling bureaus of the Treasury, with almost 97 thousand employees.

Vinson intimately affects your life and that of all your neighbors, for the policies he formulates go a long way toward shaping America's economy. On his books you are down for a theoretical debt of \$2,189.80—your per capita share of the 265-billion-dollar public debt. At the beginning of World War I the figure was only \$12.36. No one of course directly pays a per capita debt, but all of us indirectly are constantly paying on it.

Recently Vinson told how im-

portant he regards debt management. "At present interest rates, the annual carrying charge is about five billion. Interest rates determine the real burden of public debt. They should continue low for a long time to come. What the economists call a 'cheap money policy' benefits the people not only as taxpayers but as consumers, workers, citizens. Low rates will be an important factor in making possible better homes, plants and public facilities in tomorrow's America."

Vinson claims few qualities of leadership, none of showmanship. He wants to be known only as a capable workman. The late Speaker of the House, William Bankhead, once said of him, "Fred Vinson has the best organized and analytical mind I ever came in contact with."

Sitting with other men around a conference table, Vinson likes to argue things out, showing how a given action will work over a long period of time. His favorite expression is: "Let's take a pencil and figure that out." He's used up more pencils than any man in Washington, despite the fact that he has an amazing memory and can add six columns of figures in his head.

In political philosophy, Vinson was formerly rated as a conservative, but now his position is somewhat similar to the baseball position he played at Centre College. He was a shortstop, and a shortstop ranges from center to far left of the



Next Month

NORMAN ROCKWELL

favorite American artist
interprets

Yankee Doodle

favorite American song
in four pages of full color



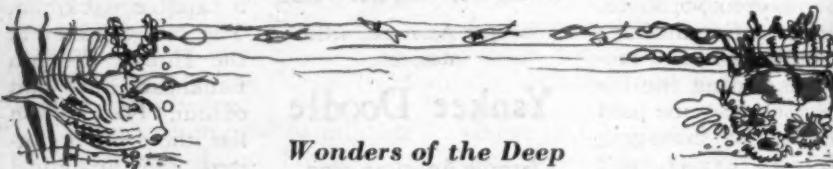
center of the infield, never to the right. Yet he believes firmly in the free enterprise system.

"This country has achieved economic greatness under free enterprise," Vinson has said. "But free enterprise cannot live on its achievements of the past."

Mass unemployment he regards as the source of most of our social and economic evils. Citing the fact that in the past as many as ten million of our people have been without work, Vinson maintains that "we cannot afford to let one-fourth of our resources go to waste. We cannot periodically declare mil-

lions of men and women to be industrial surplus."

It is estimated that it will take 25 billion dollars a year to run the government these days. Vinson points out that obviously the Treasury cannot raise that amount unless the national income increases far above the 87,829,000,000 dollars of 1939, the last peacetime year. Yet despite all the dark clouds on the nation's horizon, he is still an optimist. He sums up his philosophy by saying: "I look forward to enjoyable and worthwhile peacetime living for all the people of the United States."



Wonders of the Deep

FOR UNDERWATER creatures who need them, nature provides bifocal lenses. This phenomenon is found in the tropical fish of the genus *Anableps*, which swim with its eyes halfway out of the water. The upper halves of its eyes are adapted for vision in the air, enabling it to search the surface for floating food, while the lower halves focus under water in order to maintain simultaneous watch for enemies below.

—H. W. SALZ

THAT INCREDIBLE creation, the Sea-Anemone, somewhat resembles a delicately colored chrysanthemum, although scientists classify it as an animal. This freakish specie attaches itself to a rock on the bottom of the ocean and waves long tentacles about in search of food. When small fish or shrimp float by, the anemone actually lassos its victim by throwing out two tentacles which have also the power to sting and numb.

Because the body of the Sea-Anemone is extremely vulnerable, Nature has given it fantastic methods of defense. When a potential enemy approaches, the anemone gathers stones and shoots them from its cylindrical mouth much on the principle of an air-gun.

If this method fails, the flower-like animal launches an attack with "torpedoes" secreted inside its body and released only in time of great danger. Far more ingenious than anything modern military experts have been able to develop, these projectiles are equipped with stinging cells.

—RAYMOND SCHUESSLER



Out of this World

Here's a vivid collection of capsule stories calculated to lift you from the everyday into the realm of odd fact and fantasy . . . both old and new



Gimmicks Are Good

HIS PREOCCUPATION with unusual information permits Alfred Bester to turn out provocative, action-packed radio crime scripts almost at the drop of a check.

"I'm a human magpie. Whenever a magpie sees anything bright it steals it," says Bester. "Every time I run across an odd fact that might serve me as a 'gimmick,' it goes into my little black book."

Among other unusual items, Bester's little black book reveals that most misguided citizens who attempt to print their own postage stamps make the same fatal error. For some reason or other, they usually put the wrong number of perforations along the side of the stamp.

Among his "gimmicks" Bester has listed a trick which has worked in many stores. A pretty girl goes shopping for an expensive fur coat. She finds a coat she likes and offers to pay for it with hundred-dollar bills. Now most big stores have a rule that bills of large denomina-

tions must be okayed by the manager. Provoked by this delay, the customer leaves in a huff, but only after the manager has examined her money, found it genuine, and extended the store's apologies.

Soon the customer returns. She'll take the coat after all, she says, and pays the correct amount again in hundred dollar bills. The salesgirl assumes the bills are the same ones the manager has approved. But she is wrong: the money used in the final purchase is as phony as 39 cent nylons. —ED REYNOLDS



Sex Discrimination

ONE OF THE oddest professions in this country is the business of determining whether a chick will grow up to be a male or female. Those who practice this profession are called sexers.

You might think that anyone who knows anything at all about poultry could analyze the sex of a chick, but that isn't true. It is necessary to go to school and pass a test of the International Baby Chick Association before one can practice the art.

The sexer's pay sounds fabulous —between 75 cents and a dollar for every hundred chicks handled,

and a competent sexer can handle six hundred chicks an hour. There is a catch, however. The work is seasonal. Moreover, the sexer is usually required to maintain a 95 per cent accuracy standard. Generally, for every point under the 95 per cent mark a deduction is made from his salary.

Accuracy, however, is not the only standard by which a sexer is judged. Speed counts too. Hatcheries want their chicks placed in the right sex category as quickly as possible, for the chicks arrive at their destinations in better condition when shipped immediately.

In order to pass the International Chick Association's sexer examination a person must classify two hundred baby chicks in 25 minutes and be 95 per cent accurate.

—HAROLD HELFER



Our Probable Successors —the Ants

EVEN BEFORE the advent of the atomic bomb, scientists suspected that the days of men as world rulers might be nearly over.

"Five hundred thousand years," says Dr. Kirtley Mather of Harvard University, "might be taken as the average life of a species in the group of highly organized and notably complex creatures to which man belongs."

Since man already has existed on earth probably between 400 thousand and 500 thousand years, his time is growing short. What sort of creatures are likely to succeed him as world rulers? Well, many scientists think insects have the best chance. They also believe it is only

because of a biological accident that men instead of insects are currently supreme.

Is it absurd to think of the generally despised insects succeeding man? Some scientists think not. Insects, they say, may eventually attain a size and bodily structure much more efficient biologically than that of man. We know that even at the present stage of their evolution, certain types of insects possess civilizations strikingly like those of man, yet usually more efficient.

For example, there are several hundred varieties of ants; they have every kind of government that we find among men. There are democratic, fascist and communist ant nations. All of them, even the democracies, are divided into classes. Ants are brave, treacherous, thievish, credulous, easily imposed upon—they have most of the unpleasant characteristics of human beings. Battles between opposing ant armies appear to be as cleverly planned and as savage as any in human warfare, for ants and men are the only creatures on earth that fight wars.

In fact, in some respects ants seem as worthy to be world rulers as man has proved himself to be.

—MORRISON COLLADAY



Strongbox Heiress

ALMOST sixty years ago, a French girl named Thérèse Daurignac announced that she had been made sole heir to the twenty million dollar estate of Robert Henry Crawford, an American. She offered to

show a copy of the will, made at Nice and dated September 6, 1887, in case anyone doubted her word.

Accepted into France's aristocracy, the heiress married M. Humbert, son of a cabinet minister. Then, from America, there suddenly appeared two nephews of Robert Henry Crawford with still another will. By this second document, their uncle's millions were to go in three equal shares to themselves and Thérèse's younger sister Marie, while Thérèse was to receive an income of 72 thousand dollars a year.

The nephews entered suit to have theirs recognized as the rightful will, although they also made a friendly agreement with Madame Humbert. She retained legal custody of the twenty million dollars in securities on condition that the box containing them would not be opened until the suit was decided. A French notary, according to his own affidavit, counted the securities, sealed them in a strongbox and deposited them in Madame Humbert's safe.

Meanwhile, Madame Humbert continued to spend freely. Her notes, marked "payable after the conclusion of my actions-at-law," were accepted even by the Bank of France, and she went on borrowing until she had pledged the Crawford estate for more than eleven million dollars.

Eventually, after nearly twenty years, M. Waldeck Rousseau, then premier and a lawyer for one of Madame Humbert's creditors, demanded a showdown and her safe was opened by court order. It contained only a thousand dollars in securities, an empty jewel case, a

few copper coins, and a brass button.

France buzzed with excitement, but the Humberts, who two nights before had occupied their box at the opera, could not be found. They had fled the country, no one knew where. —PAUL V. D. HOYSRADT



Land of the Marching Dunes

WERE YOU to buy a ticket on the "Railroad to the Moon," you would not actually travel through space to Luna's pock-marked globe; you'd ride instead on a railroad in Peru that hauls its passengers for the most altitudinous Pullman journey in the world, through desert plateaus and craggy passes. The strangest part of the journey comes when the rails push due north for twenty miles through a desert of whispering sand. This wasteland seems to possess a weird life force. An unending procession of huge and identical dunes flank the roadbed and seem to march inexorably northward. At the rate of fifty feet a year, each dune rolls like a wave on an almost petrified ocean.

This movement has made it necessary for the rails to travel with the waves of the strange sand-sea in order to get above the duneland. Occasionally a dune edges too close to the roadbed. Then, no dynamite or work crew is needed. Instead, rocks are taken from the baggage car and piled on one of the crescent-like points which are the dune's ends. If placed on the right point, the dune marches to the left; if on the left, the dune swings to the right. —GEORGE GRAHAM



There's no trick to developing a creative mind; here's a program to help you

How To Develop Your *Creative Imagination*

by DOUGLAS E. LURTON

AN OFFICE boy with an eighth-grade schooling who has developed his creative imagination has a greater chance for success in life than the university graduate who has failed to put his imagination to work. For creative imagination isn't a special gift of the genius. It can be developed by anyone.

The unimaginative person, confronted with a tedious problem, usually asks, "Why doesn't someone do something about that?" He is the same person who, when someone *has* done something about it, says, "How simple—now why didn't I think of that?" Yet there's no particular trick involved in developing a creative imagination. It is a talent within the reach of everyone—a talent which rewards its possessors with a fuller, richer and happier life.

Dr. Frederic Lyman Wells, Harvard psychologist, once set out to determine the distinguishing characteristics of a business leader. He selected a group of men earning eighteen hundred dollars a year and another group earning five thousand dollars. Dr. Wells' tests

showed that the men in both groups had about the same foundation of intelligence, general information, and business traits. There was just one important difference: every one of the men in the higher-salary group had a practical, working imagination, while those in the second group didn't have it at all or had it in nowhere near the same degree.

Business executives were not surprised by the findings. Personnel men had long known the answer, but the scientific study conducted by Dr. Wells proved that they were right. Obviously, then, the man who can visualize things as they should be, as they can be, and as he is going to make them, has a decided advantage in life.

Everyone needs imagination and everyone can have it. It is just a matter of following a simple but specific program for developing it, a program devised by psychologists who have studied the subject.

First of all, these psychologists say, you must learn to observe and be curious. Select almost any common object—a hairpin, a jackknife,

a doorknob. Study it, then play a game of question and answer. Does it have to be that way? Could it be improved? Day after day study the same object. Write down your answers and let your ideas grow on paper as proof that the game is training your imagination. You'll be able to see improvement in a few days.

Ted Nelson is an example of what creative imagination can do. Nelson was a welder in the Mare Island Navy Yard in San Francisco. But he was dissatisfied with his welding equipment, so he put his imagination to work. He developed a new type of welding gun and cartridge. The government loaned him money to establish a factory, and before long Ted Nelson had 150 employees and was doing a yearly business of four million dollars.

The second step in your program is to give your imagination free rein, to overcome the tendency to smother ideas under a blanket of doubt. Let your mind run wild, regardless how fantastic your ideas seem. There will be time later to apply reason and make careful selection of ideas for development.

Sometimes seemingly wild but successful ideas are born of accidental situations. Ole Evinrude would testify to that. One day Ole rowed his girl two miles to an island for a picnic. But there was no ice cream at the picnic, and the girl wanted some. While the gallant Ole

was rowing wearily back to shore, he wondered why a small motor could not be attached to a rowboat. The result was the compact one-cylinder outboard motor that made a fortune for him. By giving his imagination free rein, Evinrude hit upon a seemingly fantastic idea—but it worked.

Creative imagination is not always a matter of creating something new; it is more often the process of making a new combination or assembly of old elements. Stewart Hartshorn, for instance, was the first man to put the spring inside window-shade rollers. It was also he who visualized a city without factories, shops, or tenements. As a result of his dream, Short Hills, New Jersey, was created many years ago by using old elements so combined that they made a model community. Just another case of creative imagination at work.

ONCE you have practiced giving your imagination free rein, learn to tie it to your emotions, to a need, to performance of a service. Gail Borden's emotions were aroused in 1851 when he was crossing the Atlantic. There was no refrigeration for the milk aboard the ship, and several babies died. Borden was greatly disturbed. By letting his emotions stimulate his imagination, he developed a method of condensing and canning milk.

Then there was Murray Spangler, a department store janitor whose back ached constantly from the work required to keep the store clean. His emotions became involved. There must be an easier way to clean a store, he decided. Spangler put a long hose on a reel

When Douglas E. Lurton, author of "Make the Most of Your Life" (Whittlesey House, \$2.00), writes about the development of creative imagination, he does so from 25 years of experience with people who, like himself, live by their creative imaginations. This article is taken from his book.

mounted on a wagon, attached one end of the hose to a tank, contrived a motor to create a vacuum. He put one end of the hose to a pile of dirt, and presto! the dirt was sucked into the hose.

Ideas have a way of growing. Houses get dirty, too, Spangler reasoned. If he could develop a simpler device, housewives would clamor for it. He interested W. H. Hoover, a harness maker, in the idea. Hoover let Spangler use part of his shop for his experiments. The Hoover vacuum cleaner was the result.

Anyone who wants to improve his creative imagination can do so by using the exercises I have suggested. But they must be used constantly to be of much service. The person constantly trying little imaginative experiments is conditioning himself for the day when he will use his imagination on an important problem and get results far beyond his expectations.

Creative thinking is not a sharply disciplined process. Some people are driven by an almost irresistible creative urge, it is true, but such people are rare. For one person with a spontaneous urge to create, there are a score of creative men and women who deliberately follow this procedure:

1. Recognize a problem, a need

for some product, a need for some new way of accomplishing something, a puzzle to be solved.

2. Prepare to meet the challenge of that recognition. This involves thorough study, research, determination of essential angles of the problem. It also involves the hard work of digging out similar problems and studying how and why they were solved.

3. Do some mental coasting. After isolation of the problem and its study, relax for a while. In this stage, the thinker virtually ceases to think. He lets his subconscious mind work on the facts acquired in the earlier steps.

4. Arrive at your solution. In some miraculous way things suddenly become clear. This sudden dawning is the reward for the tedious work involved in the recognition of the problem, the exhaustive preparation, the mental coasting.

5. Verify the soundness of your idea. Not infrequently this, too, involves tedious research and effort. At this point your work has just begun, for while you can develop your creative thinking to a point far beyond present abilities, a bright idea will be useless unless you do something about it. You must take steps to make it operative, bringing your creative imagination to its full growth.

\$\$\$\$ Slogan

R. H. INGERSOLL, maker of the popular dollar watch, was at a social function whose hostess could not remember his name. Flustered, she blurted the introduction: "Oh, the man who made the dollar famous."

The next day Mr. Ingersoll coined the slogan, "The watch that made the dollar famous." —"The Public Accepts" by I. E. LANE BUT

The electron is serving as an indispensable
assistant in the fight against disease

MEDICINE'S *Powerful New* ALLY



by NORMAN CARLISLE

FOR DECADES, courageous doctors sought to fashion electronic tools for use as weapons in the endless war on disease. Today their years of research are being rewarded. The electron, that energetic and versatile performer in so many fields of science, has now become an indispensable assistant to medicine.

The achievements of a score of instruments, ranging from the tiny electronic knife that fits the hand to the giant cyclotron that weighs hundreds of tons, are establishing mileposts every day on the road to freedom from human suffering.

The story of electronic medicine starts in 1896, when a medical patient appeared at the electric light plant in Copenhagen, Denmark. On his face was a red blemish, the dreadful mark of skin tuberculosis. He had been sent by his doctor, Niels Finsen, to take a curious treatment. Finsen had already discovered that tuberculous patients were helped by the sun's rays. But in winter there was little sun in Denmark. Would not a man-made sun have the same effect?

Every day the patient sat for two

hours in the rays of a powerful arc lamp, and every day Dr. Finsen watched eagerly. Finally came a triumphant moment when the flaming mark began to shrink. At last, electricity had taken its place as a tool of medicine.

With the success of his treatment, Finsen's fame spread, and the sick flocked to him as they had once flocked to Pasteur. He won the Nobel Prize for discovering the therapeutic value of ultraviolet rays and an artificial means of creating them. Today, descendants of the lamps that he built for the Finsen Institute are used for such varied purposes as treating skin diseases and ulcers, and killing a wide variety of germs.

In the fifty years that have elapsed since Finsen's revolutionary experiment, electronic devices have become essential to diagnosis, therapy, surgery and research. They are used in the treatment of heart, nerve and brain ailments; for the study of diet deficiencies; for the diagnosis of such mental disorders as stuttering, amnesia and insanity.

The full list of devices is long,

ranging from the familiar X-ray machine to instruments bearing such jaw-breaking names as the pallesthesiometer, which tests the body's vibration sensitivity. But perhaps the most amazing of all is the giant cyclotron, the machine which brought wartime atomic power to bear against Japan, and now, in peacetime, promises to be a boon to all mankind.

The cyclotron, invented by Dr. Ernest Lawrence* of the University of California and given many medical applications by his brother, Dr. John Lawrence of Yale, is a huge "gun" which fires atomic particles through a muzzle at tremendous speeds. When these particles are hurled into an ordinary substance such as table salt, that substance becomes radioactive. By using cyclotron-treated foods, medical science can determine what happens to substances when they enter your body.

For instance, how is phosphorus, an ingredient essential to healthful life, actually utilized by the system? To find out, the patient is fed radioactive phosphorus in a lemon phosphate. Then a Geiger counter, an ultra-sensitive device that counts the explosions of radioactive atoms, is held near the patient. How much of the phosphorus went to the teeth is approximated by holding the counter near the teeth; how much to the brain by holding it near the head. The use of radioactive foods is answering such questions as "How much iron is needed to make the red pigment of the blood?" and "How does the system absorb it?"

Radioactive foods create an-

other possibility, that of curing certain ailments. Phosphorus taken into the system gathers near the bone marrow. By making it radioactive, it may be used to treat certain cancerous diseases. Bone tumors, for example, might be treated by internal bombardment with radioactive strontium. The possibilities are tremendous, but doctors are approaching the curative aspect with proper caution.

HEART SPECIALISTS use the electrocardiograph for diagnosis because it provides a written record. Movement in each compartment of the heart projects certain waves to the body extremities. When cardiograph electrodes are attached to each arm and the left leg of the patient, these currents are recorded by a stylus on paper. Since the pattern for a normal heart is known, doctors can easily interpret variations from normal.

Nerve specialists use the same device to measure nerve reactions. From your brain a definite electrical wave moves along a nerve to stimulate a certain muscle into action. Such a wave reaches your fingertips in one twenty-millionth of a second. By obtaining measurements of time and intensity, diagnosticians gain valuable information. Called electromyography, this branch of electronic medicine promises to help in the search for causes of infantile paralysis.

Electronics has also given brain specialists the magic power of looking into the human brain. Since 1928, when Dr. Hans Berger of the University of Jena in Germany began to experiment with brain currents, electroencephalography has

*See Ernest Lawrence, *Atom Smasher*, Coronet, February, 1946.

grown to a full-fledged science. The brain is literally a broadcasting station, continuously sending out tiny waves ranging from 20 millionths to 150 millionths of a volt. They are picked up by a remarkably delicate electronic apparatus which amplifies them enough so that they can transmit impulses to a recording device, thus providing a written record.

The electroencephalograph has revealed that the brain has an electrical beat, like the heart. It operates continuously in two sets of waves, the alpha waves at the rate of eight to thirteen every second, and the beta at eighteen to fifty per second. These waves start at birth, but do not assume a regular pattern until a baby is about six months old. Brain surgeons depend upon the electroencephalograph to discover tumors. By moving the electrodes on the patient's head and studying the recorded waves, it is possible to learn before operating just where the tumor is located.

Doctors have long been able to tell much about patients suffering from loss of language, stuttering, amnesia and other mental disorders by the movements of the eyes. But now for the first time medicine has an opportunity to record these movements.

The eye acts as a miniature electrical generator, creating energy equivalent to one thousandth of a volt. When the eye moves there is a variation in this tiny current. Through the use of an electronic device, these variations are picked up by electrodes placed beside the eyes and fed to an electronic amplifier which actuates a recording pen. This record makes it possible

for the doctor to diagnose the case.

Medical men fighting the battle against insanity have likewise turned to electronics. In 1917 it was proved that artificial fever, induced by the dangerous means of giving the patient malaria, had an effect on general paresis, a brain disorder. When two engineers in an electrical laboratory complained of developing fevers while working near a high-frequency radio transmitter, Willis R. Whitney of General Electric set out to design a machine to induce fever.

At Albany Medical College, Dr. C. M. Carpenter tried the device on rabbits inoculated with syphilis and found that the germs died. Courageously he went on to try it on human beings. Here again he got results, and spread the word to the medical profession.

With the help of Dr. Leland Hinsie at the Psychiatric Institute of Columbia Presbyterian Medical Center in New York, many tests were made and the fever-creating electronic device became standard equipment for treating paresis. Essentially it is a high-frequency radio transmitter, its waves kept between two plates. When a patient is placed between the plates, his temperature rises. The doctor can control the fever to a remarkable degree.

ANOTHER electronic device holding much promise of wide application is the betatron, invented by young Dr. Donald W. Kerst of the University of Illinois. The betatron, companion to the cyclotron, hurls electrons to produce an incredibly powerful hundred million volt X-ray beam. Although work with it has been largely experimental,

many medical men believe that the betatron has vast possibilities.

Ordinary X-rays have their greatest effect on the surface. Betatron rays, however, have their greatest effect an inch and a half inside the body. Doctors envisage using these for treatment of deep tissues, without effect on the skin.

Even in the operating room, the surgeon has put electronics to work. One factor against which surgeons must guard is too great a drop of oxygen in the blood of an anesthetized patient. To give anesthetists an exact knowledge of the patient's blood condition at any moment, electronic engineers have developed the anoxia photometer, a device containing a lamp and a photoelectric tube which is attached to the patient's ear. Light passes through the thin membrane of the ear, creating a blood-colored beam which actuates the photoelectric cell, which in turn transmits its current to the instrument evaluating color. Blood-color changes occur when oxygen drops, and these changes are registered; the anesthetist need watch only the dial.

The electronic knife is another

surgeon's tool which may have wide use. When Dr. Finley R. Cook of New York was working with a static-electricity machine he received a burn which gave him the idea that electricity might prove valuable in destroying skin growths such as warts. The result was the electric needle, or so-called "radio knife." With it surgeons can operate under circumstances that would normally cause hemorrhages.

The knife works by forming a tiny electric arc at the point. It is this arc which does the actual cutting. The knife heals wounds as it creates them because the current astonishingly seals the ends of blood and lymph channels as it cuts.

When electronics entered medicine, the doctor and the physicist joined forces to form a powerful striking unit in the war against disease. Out of their efforts may come developments to transform the future of medicine. By probing the secrets of mind and body, the magic electron has already enhanced your chances for health and well-being. Some day it may extend the frontiers of human life to a point undreamed of at the present.



Clock Watchers

THE ELEVATOR MAN in an office building grew weary of repeated requests for the time. At last he put up a shelf in the corner of his elevator and placed a small clock on it. That stopped people from asking the time. Now they ask, "Is your clock right?"

—PHILIP C. BEATON

ON DULL Mondays a Slinger, Wisconsin, grocer has a novel way of boosting business. An alarm clock, its face covered, is set for an unknown hour. All purchases being made when the bell rings are free. Housewives therefore prolong their shopping, hoping it will coincide with the alarm.

—MRS. ELMER HIER

The maid-of-all-work is a thing of the past; there's something new on the horizon

You'll Have *SERVICE*, Not Servants

by CHARLOTTE PAUL

WAS YOUR kitchen a wartime casualty? Does your home still look slightly shabby because you haven't had Millie the Maid to help you clean and refurbish? Are you, like many friends and neighbors, hunting for the perfect servant? If so, don't give up hope, for there's a new light gleaming on the household-help horizon.

Although the oldtime maid-of-all-work is a thing of the past, you will soon be able to call on a new kind of domestic service, supplied by an agency with which you'll sign a contract. Various plans, each designed to suit your convenience, will provide household workers for so many hours a day, so many days a week, at a fixed charge. After selecting the plan that fits your needs, the agency will send trained, bonded domestics to carry it out.

Such super-employment agencies have already been started, and though their present rates are too high and their workers too few, they are already reorganizing their techniques and personnel to cater to the medium-income employer. To the worker this new type of agency offers steady employment, standard hours and fair play. To the housewife, it promises every kind of service, guaranteed to be expert or your money back.

Suppose you select Family Plan One, providing eight hours of

work, five days a week. A trained housekeeper arrives at your door at 8 a.m. For four hours she cleans, cooks, irons and sews. Each chore is expertly done, for in everything, from running the automatic dishwasher to cleaning the ceiling with the vacuum attachment, she has been carefully trained. At noon she leaves, to return at the same time next day.

At 4 p.m., an expert cook appears in your kitchen. She prepares the kind of dinner you couldn't dream up if Fanny Farmer were at your elbow, sets the table, serves the meal, washes the dishes, cleans the kitchen and disappears at 8 p.m., as impersonally as she came.

After 8 o'clock, if your social routine calls for a baby tender, a call to the agency will produce one—not a young schoolgirl who is vague about infants, but a trained nursemaid who knows what to do in case of accident and illness.

The agency has a list of some two hundred bonded houseworkers, of all ages, races, nationalities and aptitudes. All have been trained in domestic science schools and have graduation certificates to prove it. No matter where they work, or for whom, they put in standard industrial hours at hourly rates, with the agency paying them at the end of each week.

Plan Two brings a laundress for

eight hours, one day a week, and two housekeepers who give the house a top-to-bottom scrubbing on some other day each week. Plan Three offers housekeeping service four hours a day, five days a week, plus nursemaid service three afternoons and two evenings. Plan Four provides a top-notch cook, waitress and kitchen scientist (all in one) for four hours every afternoon and evening except Sunday. And then there are Plans Five, Six, and Seven....

If you're a regular client, the agency sends an inspector to study your home, its furnishings and the chores you want done. The data, plus diagrams, are catalogued in the agency office, along with notes as to the sort of help you prefer and what service has been most satisfactory in the past.

An agency in Chicago has been selling domestic service for the past four years. It offers a five-day service, or a one-day service with a minimum time of four hours. A bachelor in a small apartment may hire a housekeeper for an hour and a half a day. The cost—seven dollars a week. A family with two or three rooms may have four-hour service, five days a week, for eighteen dollars. Or you might want a housekeeper for three hours a day (fourteen dollars a week) or for one full eight-hour day (\$6.50).

This Chicago agency has counterparts in California and New York. One in California attends to every sort of domestic ailment, from dirty dishes to broken light switches. Californians have this agency send men to their homes once a month to do a thorough cleaning job. A cleaning woman

costs a dollar an hour—two men, doing heavy housework, \$27.50 a day. Before long there will be other such agencies throughout the country, with rates to suit almost every pocketbook.

THE TREND TO household agencies is inevitable, despite the people who say "there'll be another Depression and women will be *glad* to get housework." These optimists have forgotten one fact. During the last Depression thousands of women were on relief, yet thousands of jobs remained unfilled. Experts investigated and came up with this answer: the women on relief were too unskilled to hold domestic jobs. The now defunct WPA household-training project was operated in 21 states and the District of Columbia to give these women the needed training.

In the future, whether a domestic-science school is private or public, it will treat housework as a trade. There will be courses not only in cooking and sewing but in home management, employer-employee relations, in English and psychology and electricity and plumbing. Specialists will be created. Girls interested in child care will study child psychology, first-aid, hygiene, handicrafts, games and kindergarten techniques. Would-be cooks will learn how to cook, plan menus, balance diets and budgets simultaneously, revamp left-overs, serve both formally and informally. Furthermore, the courses will be moved out of the classroom and into the laboratory, the "lab" being a school-owned house where students live for specified periods and cook, sew, clean,

repair, serve and act generally as though they were holding a job.

Under the agency plan, none of the people who cook and clean will live in your home. The housewife used to complain because the maid left her clothes on the floor, or stayed out late on her night off, or turned up her radio when there were guests. The maid was unhappy because even when off duty, she was constantly called upon to "keep an eye on the children" or wash a few glasses. Her personal affairs, from her phone calls to the color of her boy friend's eyes, were public property of the family. But under the new servantless system the houseworker will have a home of her own, and like most other workers will return to it at the end of the day.

In fact, if there are any headaches in running a home with service instead of servants, it will be up to the agency to reach for the aspirin. You won't have to fret over hiring a maid or cry over firing one—the agency does that. If you don't like the maid that was sent you, just phone and the agency will send another more to your liking. If your regular is ill, your house will be serviced as usual, for the agency will provide a substitute.

BUT THERE'S still one big question to be answered. Can *you* afford this time-and-money-saving household service? Before the war, relatively few people could afford fifteen-dollar-a-week "maids." Even today, many of my friends say they can't pay more than fifteen dollars a week for domestic help. But—the "help's" board and room in normal times was worth fifteen

dollars a week, and increasing costs have boosted this figure. So the old-time fifteen-dollar maid costs thirty dollars in fact.

For that amount, you will be able to buy a lot of the new agency service, if not a lot of hours. Your house will be cleaned, some of your meals cooked, and you'll have at least two evenings and two afternoons free, with the children in care of a practical nurse. You won't have to buy or repair mechanical equipment like vacuum cleaners and floor waxers, for the agency's workers will bring their own. And they will be provided with gadgets you probably could not afford, such as the new electric air-cleaner that sucks all dirt, dust and smoke out of the house more completely than the present vacuum sweeper cleans a carpet.

You won't be buying uniforms and aprons. You won't be paying for a maid's vacations or illnesses. There won't be all those little extras—her laundry, towels and soaps—each item a tiny bite in the budget. In short, service will be cheap because mass-produced.

The rate you pay will go down when the agency secures contracts from a number of families in the neighborhood. A truck will stop at your house and workers will alight, carrying modern equipment. After two or three hours in your house, they won't lose time getting to the next job down the street, and thus they will be able to do four homes a day. Three people working for a dollar an hour would make the day's labor bill 24 dollars. With four families served, the agency might charge each one about eight dollars, only a fourth of what a

maid used to cost by the week.

All "servicemen"—cooks, nursemaids, housekeepers, gardeners, repairmen—will work on an eight-hour day and a five or five-and-a-half day week. Whether they'll be unionized is anybody's guess. Since 1907 there have been several attempts to set up unions, but they have failed. Housework has heretofore been too individual a matter. The millions of so-called employer-employee relationships involved were too difficult to handle. Perhaps when ten to a hundred domestics work for a single agency, unions may succeed.

But whether unions force it or homeowners give it, houseworkers in the future will undoubtedly have the protection that factory workers now enjoy. After all, three times as many accidents happen in our homes as in factories, and one of

every ten accidents occurs in the kitchen. Therefore it is only fair that home workers should be protected by compensation insurance. They should also have the benefits of unemployment insurance, retirement pay, sick leave and vacations with pay.

All this may sound like revolution, but actually "Service" is an old story. We think nothing of city-wide garbage collection, street cleaning and snow removal. And what is a laundry but good old "Wash Day" removed from the home and treated with mass-production methods?

By substituting service for servants, not only does the housewife gain in time and efficiency but millions of willing American workers achieve a new dignity, a new security, in their efforts to earn an equitable living.

Scots Sallies



"**W**ON'T you give a shilling to the Lord?" asked a Salvation Army girl of an aged Scot.
"How auld are ye, Lassie?" he inquired.
"Nineteen, sir."
"Well, I'm past 75. I'll be seein' 'im afore ye so I'll hand it to him meself."

—The Terminal Beacon

ACERTAIN canny Scotsman had carried on a courtship of several years' duration without once definitely committing himself. The girl, however, gave no sign of being worried. She was as noncommittal as her tardy lover, and remained unperturbed when one evening he produced a small notebook and, thumbing it, remarked, "Maggie, I have been weighin' up your good points, and I have already got to ten. When I get to a dozen I'm goin' tae ask ye the fatal question."

"Well, I wish ye luck, Jock," answered the maiden. "I have also gotten a wee book, and I have been puttin' down your bad points. There are nineteen o' them now, and when they reach the score I'm goin' tae accept the blacksmith!"

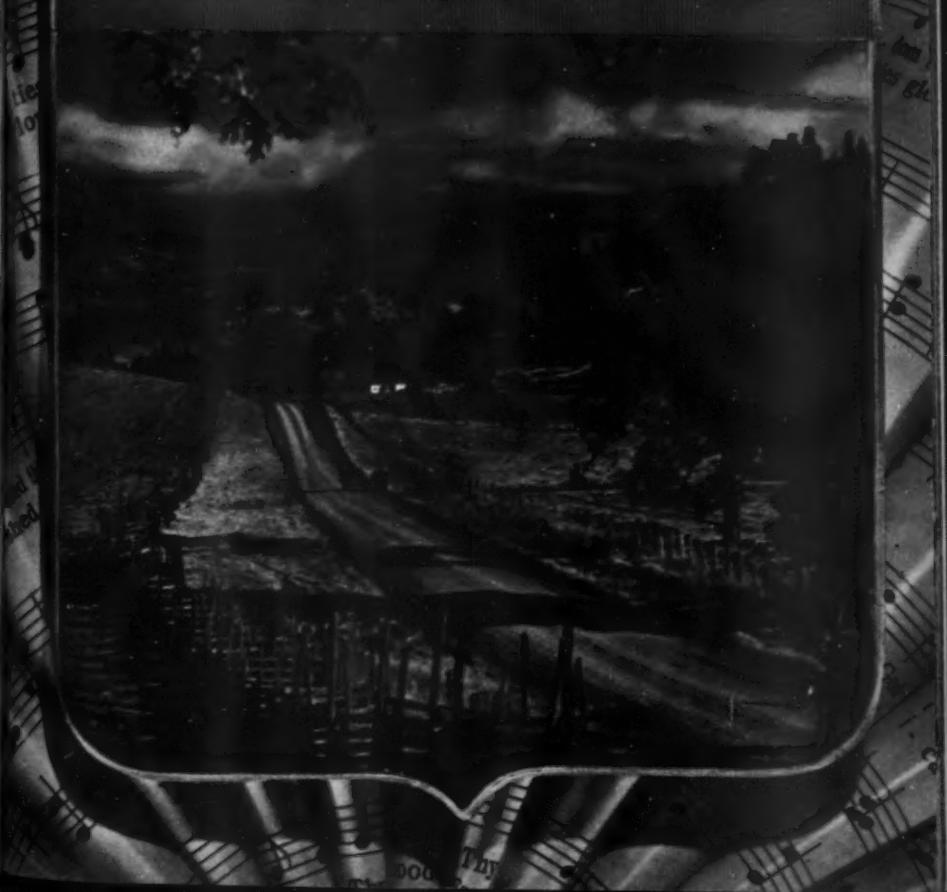
—JOHN E. DONOVAN

gim feet Whose
dream That see

Picture Story

America, the Beautiful

Our land is broader, richer, more varied, and of a greater beauty than mere words or pictures can convey, but with Katharine Lee Bates' song-poem and this lot of photographs Compton proudly salutes America, the Beautiful.





O beautiful for spacious skies,



For amber waves of grain,



For purple mountain majesties
Above the fruited plain.



America! America!



God shed His grace on thee.



And crown thy good with brotherhood





From sea . . .



. . . to shining seal

by D
of
of
lan
cu
eve
fal
the
of
I.
dr
25
slig
be
tha
the
Bu
2.
ca
Lo
ha
qu
ch
do
log
spa
fer
MA

How many of these popular fallacies about birds and beasts did you believe?



What's Your IQ on Animals?

by EUGENE KINKEAD

DURING THE COURSE of centuries, man has amassed a vast fund of information about the creatures of the earth, sky and sea. But a large part of his knowledge is inaccurate and naturalists despair of ever eliminating our most popular fallacies. Try your knowledge on the following long-accepted myths of the animal world. How many of them did you believe?

1. Elephants live to be one hundred years old.

Elephants mature when they are 25, and their average longevity is slightly less than that of humans—between 60 and 65 years. Elephants that have worked hard, such as those in the teakwood forests of Burma are retired at 40.

2. Porcupines, when attacked, can hurl their quills.

This fable was perpetuated by Longfellow in *Hiawatha*, when he had the animal "shoot his shining quills like arrows." Every school child who reads the poem starts down the error-filled trail of zoological fakery. The truth is that the spines in the porcupine's tail, a defensive weapon, are easily detached.

When the animal hits an aggressor with this instrument, the shafts are imbedded, doubtless causing many a human to feel they had been thrown.

3. Ostriches hide their heads in the sand.

This great standby of cartoonists was almost certainly originated by early desert nomads who saw ostriches feeding on the horizon. From this vantage point the birds' heads seemed buried in the sand, and the nomads concluded they were hiding. Ostriches normally depend on their great speed for safety.

4. Elephants have special burial grounds to which they repair to die.

Although the remains of some elephants unkill'd by man have been found in the jungle, no cemetery has ever been discovered, despite countless searches by ivory hunters.

5. A snake, even though headless, never dies before sunset.

A snake is dead when decapitated, regardless of the sun's position. However, because reflex action leaves its nervous system

slowly, it appears to stay alive even when life is gone.

6. Owls are blind in daytime.

Not only can they see in daylight, but their vision far surpasses man's. The reason for the owl's retirement in daylight is strictly economic. Creatures sighting him sound the alarm, and a woods known to contain an owl would be quickly depopulated of quarry.

7. A monkey searches through another's fur to remove fleas.

Monkeys have virtually no fleas. What they seek in their companions' coats is small particles of salt, the result of evaporation, which they remove and eat.

8. Snakes are charmed by music.

Snakes are deaf, at least in the conventional sense. The Indian fakir with the swaying cobra performs his trick by moving his body from side to side in rhythm with the music. A snake will imitate those motions.

9. A camel is able to go weeks without water.

No camel was ever sacrificed to determine this, but scientists believe that two or three days is the limit. Caravan routes usually are laid out so that the camels can drink at a water hole every night.

10. Eagles carry off children.

A western couple, who raised a strong and magnificent eagle from a fledgling, put this fallacy to the test. They found the top burden the bird was able to lift off the ground was seven pounds, less than the weight of many infants, not to speak of children.

11. The lion is king of the jungle beasts.

King of the beasts is the one that wins the fight of the moment. Zoo keepers say that a tiger or a grizzly can whip a lion any day.

12. An elephant never forgets.

The elephant has an inferior memory, compared with our domesticated animals like the horse, dog, or cow. The monkey has perhaps the finest memory of all.

13. Pigs gorge themselves, while birds eat sparingly.

Actually the pig is one of the most judicious eaters of all animals. Horses and cows may gorge themselves, but pigs watch their diets. Birds have tremendous appetites. Many of them eat half their weight each day.

14. Handling toads causes warts to form on human hands.

There is no connection between toads and warts.

Advice to Bridegrooms

A BOSTON HUSBAND reports that if he likes a dinner his wife has cooked he leaves her a dollar tip. If he thinks the meal only fair he leaves a half dollar. If the dinner displeases him he leaves a dime. He says this method has improved his wife's cooking tremendously.

—MRS. THELMA RUDOLPH

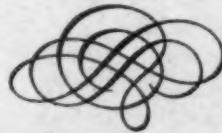
FAIRY
TALES

PICKWICK
PAPERS

THE
ADVENTURE

OF BENEDICT

A
TREASURY OF
Literary Classics



A good story lives forever, and a good book is a sure comfort and a good friend. In the hope that they will bring pleasure, and of renewed friendships to old readers, and serve as an introduction to new joys for the young, Coronet brings you Douglass Crockwell's spirited, colorful, and adventurous illustrations of scenes from six beloved stories, together with some notes of appreciation.



Robin Hood

ROBIN HOOD is one of those legendary figures of literature formed of fact and fancy indistinguishably mixed. He belongs to the people and to the people's chroniclers—the minstrels.

Outlawed in his youth by injustice and oppression, Robin fled to the shadowed fastness of Sherwood Forest and gathered about him a merry band of good, brave fellows who had also run afoul of the law. There they lived right well on good October ale and the King's forbidden deer, their dress of Lincoln green hiding them from eyes less friendly than their own. Although the deer of the forest belonged to the King, Robin's men took what they wanted and shared it with the poor people of the neighborhood. And often when English farmers awoke to find their fields plowed or their crops harvested, they breathed a word of thanks and encouragement to Robin Hood and his merry men.



The Song of Hiawatha

WHEN Henry Wadsworth Longfellow wrote *The Song of Hiawatha* some ninety years ago, he was the first to embody authentic Indian legend in a serious work of poetry. The theme he selected was the story of Hiawatha, a mighty Iroquois chieftain who lived during the sixteenth century in the forests between the Great Lakes and the St. Lawrence River. Hiawatha was one of the greatest statesmen and military strategists the Indians had, and around him Longfellow wove a delightful adventure tale of the Indian lore and eloquence he learned from the aged Ojibway and Algonquin chiefs who were his personal friends.

The stories of how Hiawatha destroyed the terrible Nahma, King of Fishes, hunting him down in his frail canoe on the shining Gitche Gumee, and of his other fabulous deeds are magically retold by America's poet, in the true spirit of the American Indian.



The Legend of Sleepy Hollow

AT THE END of the eighteenth century, when the arts were flourishing in the established civilization of Europe, our busy young republic was taking its first steps in a wilderness world across the Atlantic. Over here men were too busy writing a fateful document called the Constitution, too busy painting a brighter future for all mankind, to bother with writing stories and painting pictures. Thus it was not until the nineteenth century was a quarter gone that America produced an author Europeans were willing to respect—Washington Irving.

One of the most abiding and characteristic of his works is his fanciful tale of awkward, uncouth Ichabod Crane, the Hudson River schoolmaster whose love for Katrina Van Tassel led him into a terrible experience which frightened him away from Sleepy Hollow forever. So firmly does this story grip the imagination that even today folks shy away from the Hollow at night.



The Adventures of Tom Sawyer

FOR GENERATIONS boys suffered through books full of prim little gentlemen who thought and talked and acted like adults, and were never naughty. Then came Samuel Clemens, alias Mark Twain, ex-river pilot, ex-newspaper man, and ex-small boy. The first of the modern boys' stories, Clemens' *The Adventures of Tom Sawyer*, was published in 1876. Although it was written for adults, it turned out to be a story about real boys—noisy, rowdy, a trifle sly on occasion, and full, as Twain said, of "natural cussedness."

The unforgettable scene in which Tom Sawyer trades the unpleasant task of whitewashing his Aunt Polly's fence for a tin soldier, a dead rat, a window sash, and other such fascinating treasures is more than just good reading. It is for all time truly American, and it is the final word on the practical, yet whimsical, common sense of American youth.



Treasure Island

DURING THE eighteen-eighties, when science, industry and art were being enclosed in towers of dignity and seriousness, Robert Louis Stevenson let in a sudden gust of the fresh air of lusty adventure with *Treasure Island*. Stevenson's body was often confined to his sickbed, but in his imagination he roamed the seven seas. It was during one of these bedfast periods that his stepson asked him to write "something interesting," and together they drew the chart of a tropical island, complete with a mountain, coves and caves, and a buried treasure. The famous book followed soon after.

Thousands of sober, fact-minded men were immediately involved in Stevenson's treasure hunt. From the portals of the Admiral Benbow Inn to the empty, weed-grown hole in the shadow of Spyglass Mountain, those serious men followed the thrilling story to find again the wonder of their youthful dreams.



A Christmas Carol

WHEN THE kitchen air is spiced with the fragrance of roasting goose and baking cookies and the little fir tree in the parlor sparkles in delightful anticipation, our thoughts are sure to turn to stories of Christmas. Just as Christmas is the best-loved holiday of the year, Charles Dickens' *A Christmas Carol* is the best-loved story of the Yuletide season.

This tender, delicately moralistic story of the three Ghosts of Christmas and their influence on miserly old Scrooge has been growing in popularity ever since it first appeared, a hundred and three years ago. Once you read it, this little book will keep a place warm for itself in your heart year after year. A *Christmas Carol*, old Scrooge, and Tiny Tim with his crutch and merry shout of "God bless us every one!" have become as much a part of Christmas as Santa Claus, sprigs of holly, and the Christmas tree.

The Roosevelt Dam has brought fertility and prosperity to a cactus-studded valley

TITAN OF THE DESERT

by FREDERICK HALKETT

THE HISTORY of this romantic Southwest land is lost in antiquity. The valley over which the Roosevelt Dam now reigns with brooding majesty was once inhabited by prehistoric man, who excavated miles of canals with muscle breaking skill. After him came several centuries of Indian civilization, which created palaces and stone cities, now crumbling into dust. Last came the Apaches, who for years held Government troops at bay amidst the rocky canyons of Arizona's Salt River.

After the white man struck his roots deep, the dam site could only be reached by horseback—a long, tortuous journey over uncharted trails. Frederick H. Newell, director of the U. S. Reclamation Service, made the trip in 1896. It was then that his trained engineering mind conceived the dam, and he lived to see his vision come true.

When the towering structure was built in the early 1900's, writers called it a new Wonder of the World. They told how large stones, "each scrubbed to shine like a button," had been piled on top of one another in the dam wall to construct the huge edifice.

Thousands of tourists have gaped at the dam, nestling among rugged mountains on a loop of the ageless Apache Trail. Five years of labor beneath a blazing sun, plus nearly

nine million dollars, were required to erect the towering 284-foot structure. In 1910 it was finally completed, yet it wasn't formally opened until a year later when President Theodore Roosevelt dedicated his massive namesake.

The ceremonies marked a great victory for man in his endless war with the elements. Centuries ago, Indians tried to irrigate their crops with waters from Salt River. They even achieved a flourishing community. But climatic changes, drought and erosion turned the land into a desert waste.

After the Civil War, pioneers took up the struggle, but they too failed. Then came the Reclamation Act of 1902, and a great project began to move toward reality. When Colonel Roosevelt pulled an electric switch, opening giant sluice gates, an oasis of fertility took shape in a cactus-studded desert.

After operating the project until 1917, the Government turned the dam over to the Salt River Valley Water Users' Association, a corporation of farmers holding votes in proportion to the acreage of their land. Today, the irrigation project is the most successful in the world. And from all over the globe, officials come to see how American enterprise conquered an age-old problem and brought prosperity to a new frontier.



The Mighty Roosevelt Dam

A sweeping vista of Arizona desert, hills and mountains frames the dam which impounds Roosevelt Lake. The giant structure was named for Theodore Roosevelt, who dedicated it in 1911. Today it supplies water and generates power for thousands of acres of once arid land.

The Coronet

Portrait of a MURDER

Victim: Stephen Sims, millionaire antique collector, who was found at 5 p.m. stabbed, apparently after a struggle, in the library of his Chicago mansion.

Suspects: Sims' two nephews—Raphael, who lived with his uncle, and Charles, who lived in New York. According to Sims' lawyer, the millionaire had planned to disinherit both nephews.

Synopsis: Raphael had left the house at 4 o'clock. He was seen leaving by the butler, who revealed that there was a secret entrance to the library behind a heavy bookcase. Only Charles had a key to it. But it was 5 o'clock by Charles' watch when he flew in from New York, and the airport was ten miles away. The hands of the grandfather's clock, which was upset in the death struggle, pointed to 4:30. But the butler said the antique timepiece didn't run and had always indicated the time as 5:30. Who killed Sims?

Solution: See page 75.

etame Book Section

All Around the House

with Kate Smith, Guest Editor

Kate Smith likes games of all kinds—athletic games, card games and parlor games, including quizzes. The game below is made up of incidental information that Kate picks up here and there and often passes on to her friends in her daytime program, *Kate Smith Speaks*. Even if the questions perplex you, you might get some helpful hints from them—perhaps from the very first one. Count ten points per question; passing grade is 60 for women, 50 for men in aprons, 40 for other men. The answers are on page 75.



1. You can sharpen dull scissors with sandpaper just by
(a) rubbing it against the blade
(b) cutting it up
2. You can tenderize beef by
(a) rubbing it with vinegar
(b) cooking it very fast
3. If you want to equal one tablespoonful, use
(a) two teaspoonfuls
(b) four teaspoonfuls
4. To put a knife-edge on trousers, press them through
(a) a damp newspaper
(b) cardboard
5. A good substitute for glue is
(a) a boiled potato
(b) syrup
6. To rinse clothes thoroughly, use
(a) soft water
(b) hard water
7. A pinching shoe can be stretched with
(a) saddle soap
(b) a hot iron
8. Before popping popcorn,
(a) soak it in ice water
(b) puncture each kernel
9. A good egg, dropped in water,
(a) will float
(b) will sink
10. To tell a young chicken from an old one, feel the breastbone; the young bird's breastbone is
(a) softer
(b) harder



Meet the Smiths



"We Smiths aren't exclusive people," says Kate Smith, who is proud of her All-American name, "but this game is *exclusively* about Smiths." Try her favorite question—No. 3—and you'll learn that when Kate sings *God Bless America* it isn't the Smith family's first association with patriotic songs. Name six Smiths and you've a nodding acquaintanceship with the family; get nine right, and you've a bit of Smith in you; twelve or more right, and you must be named Smith yourself. Answers are on page 75.

1. Two churches were founded by Smiths: the Baptists by John, the Mormons by whom?
2. Mary Pickford's real name is Gladys Smith; by what name is Kathryn Smith, who sang and danced in musical comedies, best known?
3. What patriotic song did Samuel Francis Smith write?
4. Sidney Smith was the cartoonist who created "The Gumps," which Smith is "Barney Google's" comic-strip partner?
5. The Smiths are the largest American family, of course, but which is second-largest?
6. Thorne Smith wrote the *Topper* books; what Smith wrote about a tree in Brooklyn?
7. Two famous fraternal Smiths, generally known as Mark and Trade, both wore (a) Glasses (b) Beards (c) Clerical collars.
8. John Smith, whom Pocahontas saved, was only a captain. Which General Smith is called "Howlin' Mad?"
9. Paul Revere was a —smith.
10. If you tack "—smith" onto a kind of weapon, you'll get a Sinclair Lewis novel.
11. What Smith attracts girls to Northampton, Mass.?
12. When things shatter what sort of "smith—" do they break into?
13. What —smith worked under a spreading chestnut tree?
14. What Smith was "The Happy Warrior?"

You Know His Name, But Can You Prove It?

The "vital statistics" below are disguised by being given in initials or numerals. Can you identify this subject? See p. 75.

1. NAME J.S.	6. MARITAL STATUS M.
2. ADDRESS . . . K.	7. TITLE M.
3. CITY M.	8. POLITICAL AFFILIATION C.
4. AGE 66	9. ORIGINAL NAME L.V.D.
5. SEX M.	10. NATIONALITY R.





A Game of Sound Effects

"I'm an amateur sound-effects woman," says Kate Smith. "I can imitate anything from animals to railroads." Kate's friends say she's a natural mimic, but even Kate admits that there are a few of the sounds in the game below that she can't exactly duplicate. Each group of six noises in the left-hand column can be matched with the six kinds of animals in the right-hand column. Match up 14 for a fair score, 18 for a good score, 22 or more for a top score. You will find the answers listed on page 75.

In the air

1. Hoot (a) Crows
2. Gaggle (b) Owls
3. Quack (c) Doves
4. Caw (d) Bees
5. Coo (e) Geese
6. Drone (f) Ducks

In the house

13. Warble (a) Cats
14. Whine (b) Crickets
15. Chirp (c) Dogs
16. Bay (d) Canaries
17. Squeak (e) Puppies
18. Mew (f) Mice

In the barnyard

7. Whinny (a) Pigs
8. Squeal (b) Hens
9. Crow (c) Horses
10. Hee-haw (d) Cows
11. Cluck (e) Roosters
12. Low (f) Mules

In the forest

19. Chatter (a) Elephants
20. Roar (b) Monkeys
21. Laugh (c) Lions
22. Hiss (d) Snakes
23. Trumpet (e) Wolves
24. Howl (f) Hyenas

How Well Do You Know the King's English?

How many common English words of four or more letters can you make from this diagram? To make each word, start anywhere and move from each letter to any adjoining letter, in any direction. Thus from the "A" in the top right-hand corner you may move so as to make ANOINT (or anointer, but not both). Don't use the same letter twice in one word; don't use proper names or foreign words. Average score is 40 words in 30 minutes. Our guest editor got a total of 52 words; can you do better? Her list of words is on page 75.

R	E	F	R	A
C	T	I	O	N
I	N	D	E	X
O	F	Q	U	A
R	T	Z	I	S



Pick the Perfect Rhyme

Here's a pronunciation test for poets and a vocabulary-builder for everyone. Each numbered word is a perfect rhyme for one—but only one—of the three words that follow it. You pick the rhyme—for example, does No. 1, *steppe*, rhyme with *peep*, *pep*, or *peppy*? If you pick nine perfect rhymes it's a pronounced success—six to eight, it's a fair score—less than six, you're no poet (and probably know it). Answers on opposite page.

1. STEPPE—*a vast plain*
(a) peep
(b) pep
(c) peppy
2. MALINGER—*pretend to be ill*
(a) ginger
(b) finger
(c) hinger
3. CLAMBER—*scramble upward*
(a) amber
(b) chamber
(c) hammer
4. GAOL—*a prison*
(a) fail
(b) howl
(c) portrayal
5. GUINEA—*British monetary unit*
(a) briny
(b) skinny
(c) zinnia
6. GRIMACE—*make a wry face*
(a) erase
(b) pumice
(c) Remus
7. RIBALD—*coarse*
(a) piebald
(b) scribbled
(c) recalled
8. BLACKGUARD—*a scoundrel*
(a) lacquered
(b) placard
(c) haggard
9. BADE—*commanded*
(a) pad
(b) paid
(c) pod
10. PERJURY—*willful falsification*
(a) augury
(b) brewery
(c) surgery
11. DOUR—*sullen in aspect*
(a) four
(b) sour
(c) tour
12. ZEPHYR—*a gentle breeze*
(a) desire
(b) heifer
(c) reefer

Leo Durocher's Favorite Party Trick

You can idle away an odd moment by challenging your friends around the table to write the figure 100 and draw a circle around it—all without once lifting the pencil from the table. Yes, it can be done. Do you give up? Then see the diagram-solution on the opposite page.



Portrait of a Murder

Charles killed his uncle at 4:30 Chicago time, but his watch was on New York time and said 5:30. So he thought the antique clock (which also said 5:30) was running, and set it back to 4:30 (see picture) in order to provide himself with an alibi. Charles entered the room through the secret bookcase door; creases in the rug showed that the bookcase had been moved.

Leo Durocher's Favorite Party Trick

Fold down the top of the paper and draw the figure at the right. Leaving your pencil on the paper, lift up the flap with your other hand. Then complete the circle.



A N S W E R S

Meet the Smiths

1. Joseph Smith
2. Kate Smith
3. *My Country, 'Tis of Thee*, also called *America*
4. Snuffy Smith
5. Johnson
6. Betty Smith
7. Beards (on Smith Bros. cough drop boxes)
8. Gen. Holland M. Smith
9. Silversmith
10. Arrowsmith
11. Smith College
12. Smithereens
13. *The Village Blacksmith*
14. Alfred E. Smith

All Around the House

1. Cutting it up
2. (a) Vinegar or mustard closes the pores, seals in juices.
3. Four teaspoonfuls
4. A damp newspaper
5. A boiled potato
6. Hard water
7. (b) Rub iron over a moistened cloth while the shoe is on
8. Soak it in ice water
9. Will sink
10. Softer

The King's English

anoint	fiction	iron	ride
arid	find	nexus	rife
aroint	finite	nice	rift
audit	fond	nidus	rind
audition	font	nitre	rite
cetin	fort	node	roan
cite	foxed	once	rode
cretin	fried	onion	rondeau
diet	frond	oxen	rondo
dint	front	quasi	sued
done	index	quiz	tide
edit	indite	reft	tiered
edition	inter	rein	tonic

You Know His Name . . .

Joseph Stalin; Kremlin; Moscow; male; married; Marshal; Communist; Iosif Vissarionovich Dzhugashvili; Russian

Game of Sound Effects

1. (b)	9. (e)	17. (f)
2. (e)	10. (f)	18. (a)
3. (f)	11. (b)	19. (b)
4. (a)	12. (d)	20. (e)
5. (c)	13. (d)	21. (f)
6. (d)	14. (e)	22. (d)
7. (c)	15. (b)	23. (a)
8. (a)	16. (e)	24. (e)

Pick the Perfect Rhyme

1. pep	5. skinny	9. pad
2. finger	6. erase	10. surgery
3. amber	7. scribbled	11. tour
4. fail	8. haggard	12. heifer

Youngsters Get Business "Know-How"

Coronet's new Friendship Club now gives boys and girls the opportunity of discovering and developing their talents for business. Many fine prize offerings, such as games, compasses, sporting goods, and even bicycles—stimulate the youngsters to develop sales initiative . . . to "keep books" . . . to operate their own prize-rewarded business. For complete information, boys and girls can write to: Don Steele, Coronet Friendship Club, Dept. A, 919 N. Michigan Avenue, Chicago 11, Illinois.

OLD JIM:

Symbol of a Nation's Growth

by CAROL HUGHES

THE LONELY DIRT road winds across desolate hills and valleys to the top of Peeled Chestnut Mountain in Virginia. Up there, a 74-year-old coal miner lives alone in a weather-beaten shack. Something tugs at your heart as you first glimpse him on the porch in faded overalls, staring at the mountains that mothered him. In sixty years of work this old man has mined ninety thousand tons of coal, enough to fill a freight train more than thirteen miles long.

If you look at him now, seated close to the straggly flower beds tended by his wrinkled hands, old Jim Larue seems an unimportant and forgotten character whom the world has passed brusquely by. Actually, he is a small but living symbol of the unimportant and forgotten men everywhere who helped make America the greatest nation on earth.

He stands up now and peers down the path, a childlike glow on his face. Visitors! He comes to the gate, a tall man with a heavy moustache and deep lines plowed under his tired eyes. "Mighty glad

Alone in his mountain shack, a laborer looks back on a lifetime devoted to digging the coal that powers the world



to see you," he says. Fumblingly he pulls out two old chairs.

From the porch, doors open into his two little rooms. No rugs cover the board floors, only an old iron bed, a worn dresser and a little table. His kitchen has a forlorn look. Jim senses it. "Place don't seem the same since she died." A pause. Then: "I'm thinkin' of goin' back to the mines."

Old Jim is always thinking that. The mines are his recreation, his religion, his life. He talks about the last day he worked there, a few months ago. He was loading "muck" into a car. Suddenly something happened—"a catch took him in the side" and he started to fall. If he hit the timbers holding up the shaft, other miners might be trapped with him. He grasped the truck and it fell over.

For a long time he lay still on the ground. Then he heard the miners shout: "Who's on top down there?" Slowly he pulled himself up. "I am," he said. "But I guess for the last time."

Haltingly he started walking toward the tunnel. His burly frame

could take no more. His sixty years as a small cog in the wheel of a four-billion-dollar coal empire had come to an end.

He went home, walking as he had for years across the gullied hills to his door. Only this time it was different. There was nothing to come home to, nothing to get up for. Only memories.

Jim Larue is now a part of mining tradition. His is a record in the industry—almost from the cradle to the grave. There's a coal-field saying: "The mines have got him." When the mines have got a man, he belongs to them for life. The calling continues through sons and sons of sons who "take to the mines." Yet without the mole-like Larues, America could not boast the highest standard of living in the world. Jim turns over in his gnarled hands a lump of shiny black coal. "She powers the world," he says proudly.

OLD JIM is almost right. Semibituminous coal has sixty million customers. It supplies a large part of the mechanical energy used in the United States; powers most of the country's locomotives; generates more than half of all our electricity. It is essential to the making of America's steel. Today, the Pocahontas Field, where Jim Larue spent his years, covers 335 thousand mountainous acres in Virginia and West Virginia. It supports 85 highly efficient mines, employs 27 thousand miners whose annual aggregate output is some thirty million tons.

But things were different on the day, sixty years ago, when Jim came out of the hills of Mercer

County, West Virginia, to seek a fortune in coal. His father was a railroad man, but Jim did not care for railroading. As a boy, poor and insignificant, he had heard the miners talk, a glow on their faces. The lure of the mines which took hold of him then was too strong to resist. For years, he had dreamed of the mines just over the hills—dreamed of high living born of many pay checks.

As the stringy lad of fourteen years stood at the top of Peeled Chestnut Mountain, staring at the village of Pocahontas, it was all there—everything he had dreamed about. Coal—black, hard, combustible—buried in tons right under his feet. Cold and inhuman as Midas' gold, it was nevertheless the medium which might some day take him from mountain boy to the presidency of an industrial empire. Looking down he saw, in the empire's busy heart, the Pocahontas Colliery.

There young Larue got his first job, laying tracks and loading coal. In those days all a worker needed was a strong back. Jim got up an hour before dawn and returned home an hour after dusk. For his twelve hours he earned \$1.25 a day. In young Jim's time and place, this was a fortune.

There were few machines in 1885 to mine the coal when a new vein was opened. Larue began his mining by lying flat on his back and picking out six feet of coal above him so that eventually he could stand erect in the chamber and swing a shovel. It was hard, grimy, brutal work, but as the years passed Larue became an expert. He also came to know that he had

cast his lot for life with the common laborer. But discouragement did not follow, for Jim Larue loved his job, loved the mines. Always he was content to do what he could—a step at a time.

Eventually legends grew up about him. He escaped death a dozen times as though by miracles. One day he was working with twelve miners in an old chamber. Suddenly he put down his pick. "I'm gettin' out of here," he said. "The timbers are talkin' bad." Without a backward look he headed for the main tunnel. Just as he reached it the chamber crumbled, burying the twelve men under tons of earth.

Another day Jim was working beside his brother, five hundred feet down. Again he dropped his pick and stood quietly. Wise, wary, he cocked an ear, listening. Then he slung his pick over his shoulder. "The mine's talkin'," he told his brother. The other men looked at him and laughed, then went on with their work.

The boss came over. "Are you afraid to mine?" he asked Jim with sarcasm. The old man shook his head. "I'm walkin,'" was all he said. He walked fast, then began to run. As he reached sunlight a cave-in came, one of the worst disasters in mine history. Scores of men were killed. Among them was Jim's brother.

OLD JIM'S MARRIAGES had a sad turn. His first wife, Louisa, gave him two children, but he seldom saw them. He smiles wistfully today as he tells about the time he was in the yard with his small daughter and gave her a scolding.

She screamed to her mother: "That man that comes here Sundays is quarrelin' with me." Old Jim remarks: "Miners don't get much time for family life, leavin' the house before light and comin' home after dark."

The lonely hills were finally too much for Louisa. One day she packed up and took the children away. Several years later, after Louisa had divorced him, Jim married Mary Ann Baker from Pocahontas. They had two children, and then Mary Ann died. Old Jim seldom sees his children, now that all four are married. It's a long walk to his shanty—eight miles of mountain road.

Once a week he trudges to town to pick up his "meat and bread and things." Villagers, accustomed to seeing his gaunt, stooped frame, talk of the times when Old Jim was working and they would glimpse him plodding over the mountains with a bundle under his arm. "Nobody knows how many kids he has clothed," they say. "Seems like every time he heard of a soldier being killed, he went to take clothes to the kids."

Night after night, after Jim goes indoors to his tiny bedroom, he reads the Bible in dim lamplight. "Guess I read it through six times," he tells you proudly.

A few months ago disaster came to Old Jim's house. He was listening to his radio while a thunderstorm raged outside. Suddenly lightning shot through the window. The bed caught fire and for a time Old Jim thought his cabin "was a goner." He brought buckets of water and saved his home; but the radio was ruined. "I sorta miss

that little box," he says. "It was good company in the house at nights."

Old Jim's days are long. He putters around the little shack, sits on his sagging porch in the sun. But always he looks hopefully toward the mines. "I'll be gettin' back there soon," he says, while bidding you good-bye. "It's only my side still gives me some trouble now and then."

Jim Larue is just an American laborer who worked faithfully throughout a lifetime because he loved and respected his job. He was part of a now-vanished era: he and his times have passed into history. Old Jim never became president of the mines. But he gave, through many presidents, his small share of labor to the building of a great and powerful country.



Marital Maze

■ A YOUNG BRIDE was annoyed by her husband's presence in the kitchen while she was preparing dinner. And when he accidentally knocked her cook book to the floor, she flared up.

"Now look what you've done. You've lost the place and I haven't the least idea what I'm cooking." —*Pathfinder*

■ AN AMERICAN film actress was applying for a passport.

"Unmarried?" asked the clerk.

"Occasionally," replied the actress.
—*The Bulletin*

■ While visiting the zoo, a not-too-intelligent individual saw a baby deer. Its keeper stood nearby.

"What kind of animal is that?" the gentleman inquired.

"You mean you don't know?" the keeper replied. "What does your wife call you every morning?"

"Say," exclaimed the visitor, "you don't mean to tell me that's a skunk."

—RANDOLPH MACFARLAN

■ "IT'S SURPRISING," remarked the professor to his wife at breakfast, "to think how ignorant we all are. Nearly every man is a specialist in his own

particular line and in consequence we are all narrow minded."

"Yes, dear," said his wife.

"I, for instance," he continued, "am ashamed of my failure to keep abreast of modern science. Take the electric light, for instance. I haven't the least idea how it works."

His wife gave him a patronizing look, and smiled.

"Why Herbert! I'm ashamed of you too. It's simple! You just press a switch, that's all!" —*The Communique*

■ THE BELLIGERENT husband demanded, "I want to know once and for all who is the boss in this house."

His wife replied, "You'll be much happier if you don't try to find out."

—MACK CHIPS

■ "THERE YOU ARE, my dear," the bride announced, "my first turkey." She proudly placed the steaming bird on the dinner table.

"It looks wonderful, darling!" her husband responded. "What did you stuff it with?"

"Stuff it?" exclaimed the bride. "Why dear, this one wasn't hollow!"

—*The Ship's Log*

For centuries, music has wrought miracles to help man in his fight for freedom

Songs That Changed History



by DORON K. ANTRIM

ON AN August evening in 1830, every seat in Brussels was sold out. Satins gleamed, diamonds glistered, epaulettes winked in the lights of great crystal chandeliers. Society had come to hear Auber's new opera, *La Muette—The Dumb Girl of Portici*.

To a sensitive observer, the tension of the brilliant audience might have seemed tighter than the E-strings of the tuning orchestra. All Belgium was restless. The behavior of that Dutchman, William I, was insufferable! For fifteen years, ever since the Treaty of Vienna, Belgium had chafed under the rule of the Dutch, a people not only of completely different language, customs and ideas, but numerically inferior—and so stupidly stubborn!

The Belgians had finally united in presenting a petition for redress of their grievances, signed by more than 300 thousand persons, but William had shrugged it off. It was the ultimate humiliation; every Belgian was muttering the current equivalent of "Are we men or mice?"

Such was their mood when the curtain, with a velvet sweep, presented under the innocent title of *La Muette* an electrifying, passionate appeal to patriotism. The audience never heard the opera's end, for with the inflammatory words of "*Amour sacré de la patrie!*" it rose

and surged to the street—the nucleus of an army that was to win Belgium's independence.

What happened in Brussels is proof that many a crisis generates its own song, causing a tense situation to explode into violence. Most famous of these "incendiary" songs is of course the *Marseillaise*. Written as a marching tune in 1792 by a young royalist officer in Strasbourg, it reached Marseilles cafés two months later. From those cafés went forth the glorious "six hundred Marseillais who knew how to die" and who gave the immortal song its name.

They marched, singing, from Marseilles to Paris to down a tyrant; and they stormed the city walls and died, on August 10, 1792, with Rouget de Lisle's cry, "*Marchons!*!" on their lips. That cry came to symbolize not only the French Revolution but mankind's struggle for freedom itself.

After the death of the six hundred Marseillais, "their" song became the flame which leaped from Bastille walls to light tumbrel and guillotine. It worked magic, like Joshua's trumpet at Jericho. In November of that year the French army, under Dumouriez, was being driven back by the Austrians at Jemappes. The retreat was fast becoming a fatal tangle of demoralized men fighting each other to get free and

run. Dumouriez forced his way into the struggling mass and, in a clear tenor, started the catalytic words: "Allons, enfants de la Patrie! (Come, children of the Fatherland)." Hoarse voices took it up, until it swelled to a triumphant shout. The outnumbered troops turned and swept the Austrian Army back.

A hundred and fifty years have not destroyed the inflammatory quality of the *Marseillaise*, as today's Germans well know. The song was forbidden, under the death penalty, all during the occupation of Europe—and this time there was no *1812 Overture* to smuggle its opening bars, in reminder and promise, to delighted audiences laughing at the conquerors.

There was, however, the famous "V" rhythm of the opening to Beethoven's *Fifth*, played as identification on the BBC-Europe and underground radios, chalked on walls, tapped on tables—a haunting, confident taunt to the arrogant invaders that Victory was yet to come.

WHILE perhaps no other song has had the lasting power of the *Marseillaise*, at least two American songs have stirred people to violent emotion. At the beginning of the Civil War, an audience in Montgomery, Alabama, listened without enthusiasm to the first playing of the new *Bonny Blue Flag*, written as the rallying song of the Confederacy. The desperate bandleader, after a spatter of polite applause, had an inspiration: he had his men turn the popular minstrel ballad *Dixie* into march tempo—and sing it. The result was electrifying. From the back of the hall a young tenor

voice screaming "Look away!" sounded the first "rebel yell" that was to lead many a southern charge to victory.

The North also had its song. *The Battle Hymn of the Republic* was written in a Washington hotel room, from whose windows Mrs. Julia Ward Howe could see "the watchfires of a hundred circling camps." First published in the *Atlantic Monthly* in February, 1862, it swept the country.

Its author was present when Chaplain McCabe of the 122nd Ohio told a huge Washington audience of their sufferings in Libby Prison, and the scene there when the news of Gettysburg was smuggled in to them—how they all stood and sang "Mine eyes have seen the glory." He then started the hymn, and the audience caught it up.

Mrs. Howe said: "The effect was magical. People shouted, wept and sang all together; and when the singing ended, above the tumult of applause was heard the voice of Abraham Lincoln exclaiming, while tears rolled down his face, 'Sing it again, sing it again!'"

Other songs of less than national importance have served effectively as "mood music." On the debit side is the role played by our immensely popular *Roll Out the Barrel*. For two days in April, 1940, German bands filled Oslo's streets with its lilting refrain, shouting the chorus with such abandon that the hypnotized Norwegians gathered to join in what appeared to be an innocent songfest.

At the end of the second day, *Roll Out the Barrel* came to an abrupt end. The bands disappeared, and

on the street corners where they had played the disillusioned Osloans found machine guns tuned for a five-year *Danse Macabre*. Seldom has the psychology of music been more cleverly used to deceive an unsuspecting public.

That piece of strategy was carefully planned by propaganda experts. But an amateur, an Englishman, proved himself an able psychologist when a World War I emergency demanded it. When the men of General Bridges' exhausted regiment, retreating from Mons, collapsed in the square of a deserted village, Bridges noted their glazed eyes with despair. The Germans were close behind, and he

knew his men couldn't go on—without a miracle.

An abandoned toy shop provided the miracle. Bridges, commandeering its stock, marched around the square tooting the lively strains of *Tipperary* on a penny whistle and beating a toy drum. His aide followed, passing out whistles, drums and noise-makers into suddenly eager hands. Soon the revived men marched noisily off to safety behind their general.

As long as men struggle for freedom, there will always be stirring songs—songs born in a time of crisis—to galvanize minds and hearts into triumphant action and change the course of history.

Looking Back on Mr. Churchill

CHURCHILL's fondness for doing his morning work in a dressing gown finally resulted in a scene unique in American annals. It was during a stay at the White House that Roosevelt entered Churchill's room, to find him nude, about to begin shaving. The Englishman was quick to point out the historic significance. "This is probably the only time in history," he declared, "when the Prime Minister of England, in the nude, has received the head of another great state."

WHEN CHURCHILL's night-owl habits began to make nervous wrecks of the best secretarial staff in England, he made one fatal experiment with mechanization. He bought a dictaphone equipped with a long cord which allowed him to compose as he paced. One morning, haggard after a night's labor, he turned over to his staff the records which he jubilantly announced contained "an entire chap-

ter of my new book." They yielded only an agonizing silence. The author had not hooked up the machine.

CHURCHILL's paintings done during the 1930s are a record of an aimless wandering—landscapes of the Riviera, Dutch canals, Norwegian fjords, and plantation scenes of Bernard Baruch's estate on the Waccamaw River. His friends agree that his finest piece of work in this period is a still-life of two glasses alongside a bottle of brandy and a bottle of Scotch.

WINSTON CHURCHILL and Clementine Hozier were married in London at St. Margaret's, Westminster, on September 12, 1908. Lord Rosebery at the time remarked, "There are two lively chips. The marriage will not last a month." But Churchill has never had any doubts. In one of his early memoirs he wrote, "I married and lived happily ever afterwards."

—*The Lives of Winston Churchill* by Davenport and Murphy

Four generations of coppersmiths have kept alive an ancient craft in a modern era

Kettles by "Burkhard"

by RALPH L. BOYCE

"WHEN WE THINK of kettles we think of Burkhard." That's the way food and candy manufacturers feel about an old-fashioned Brooklyn firm that has been supplying their copper kettles for more than a century, ever since Peter Burkhard hammered out his first kettle early in the 19th century. Today the methods in the little shop are the same as in grandfather Burkhard's time—or for that matter since the ancient art of kettlemaking was born.

The late Milton Hershey bought his first kettle here when he began making caramels in Pennsylvania in 1886. The original kettle fashioned for the Smith Brothers was used to make cough drops by hand over an open fire. Gail Borden began using Burkhard kettles when he opened his first milk evaporating plant in 1857. These pioneers, like manufacturers today, preferred copper because of its even distribution of heat, resistance to corrosion, and lasting qualities.

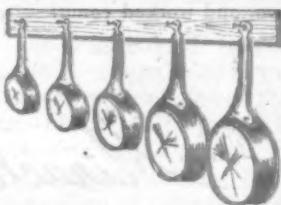
Some of the equipment made by Burkhard has been in service more than sixty years, for every kettle that leaves the Brooklyn plant is enduringly fashioned by a veteran coppersmith, using the centuries-old tools of his trade—hammers, anvils and an open hearth. By alternately heating and hammering, the copper is shaped to size, while

the springy wrist-action blow of the kettlesmith increases the metal's tensile strength. It takes about two and a half months to complete a 500-gallon kettle—a standard size in the food industry.

A glance through the yellowed records of the firm is like a journey back into time. Many customers' names preserved in Spencerian script have long been forgotten, but here and there one finds the name of a little company of the '60s or '70s that was later to become a household word in America—candy names like William Loft and Stephen Whitman & Son; pharmaceutical houses like Colgate, McKesson & Robbins, and Parke-Jennings (now Parke-Davis). Near the turn of the century, the names that are easily recognized become more numerous: Luden, Johnson & Johnson, General Electric, Eastman Kodak.

Thomas Burkhard, Inc., is only a small shop, sandwiched in between other shops on busy Flushing Avenue in Brooklyn. But four generations of the family have directed its affairs. There are pictures of the four generations on the walls.

This old and firmly established business is proof that despite the Machine Age there is still a respected place in America for a handmade product fashioned by conscientious craftsmen.



A gray-haired little Padre has settled old feuds, rebuilt a town, and worked countless wonders for his people

Miracle Man of Mexico

by MURRAY MORGAN

HE DOES NOT look like a wonder worker, this gray-haired little Mexican with a small head, big ears and wrinkled forehead. He likes to wear white suits, checked vests and black slippers; his black-rimmed glasses look as though they had come from a ten-cent store.

His appearance is unimpressive yet those who know Father José María Cuevas y Fellez say that five men like him could remake Mexico. And the people of the little pueblo of Caracuaro, where he is priest, highway engineer, health superintendent, custodian of national property, architect and historian, call him "the man who works miracles."

When Father José walked his white horse into Caracuaro on a December day in 1936, it seemed unlikely he would even be able to work. He was 54 years old, weak from malaria and fatigued after a two-day ride across the mountains from the nearest highway.

The radical *agraristas*, the rural party, most powerful political group in the region, were determined that the church, closed four years be-



fore, should not be reopened. The big landowners whose estates had been subdivided among the peasants looked to the Padre for favoritism. Caracuaro itself was sick, its water bad, its people poor. No one could remember when the last house had been built.

In less than seven years Father José has founded a new town, made peace between the warring political factions, pushed the first auto roads across the mountains, rebuilt the cathedral (mixing the cement and pouring the foundation himself), started a museum, directed one of the oldest *fiestas* in Mexico, and served as health officer and custodian of national property. All this was spare-time work. His regular occupation is conducting religious services in ten towns, some as much as eight hours apart on horseback.

In waking up a town which had slept for more than a century, he made no enemies. Everybody loves the little priest. I heard an army general describe him as "the finest man I ever met."

A farmer said simply, "I would

give him my land if he asked it." And an anti-clerical Communist said, "The trouble with Father José is that he is so wonderful he restores faith in the church."

When I asked Father José how he had managed to remake a town, he ducked his head bashfully and said, "I just like to talk to people." Then a farmer told me, "He could talk corn into tortillas and wheat into bread."

ON THE Padre's second day in Caracuarro, a committee of peasants called to say they did not want the church reopened. They said priests favored the rich. So Father José started to talk.

"I said I would not open the church if they did not want it," he recalls. "But I also said they could not make me leave town because I was a federal official. Under Mexican law, church property is national property and I was custodian of the church for the government. I said I would reopen the church when they wanted me to. In the meantime I would go ahead and repair the building."

As he worked on the old building, the Padre talked to the landowners who had lost property. "You should not hate men just because they took your land," he told them. "You were not using most of what was taken. These men did not steal it; it was given them by our government. And the government has promised to pay you."

The landowners forgot their hatred. Then Father José talked to the peasants. "You have your land now, so why bear old grudges? Treat your old masters as your equals. Don't keep on being afraid.

They know many things and can help you."

After the Padre had been in Caracuarro a month, the men stopped wearing pistols to the market place. The *agraristas* asked Father José to reopen the church. The government appointed him health officer, custodian of national property and mediator of disputes in nine more pueblos nearby.

Father José took his duties as health officer seriously. He vaccinated and gave injections, he preached sanitation and cleanliness, he persuaded the *agraristas* to open their clinic to everyone in town. Then he began to ponder on ways of bringing new industries into this remote region.

The mountains of Mexico contain rich minerals, but there are almost no roads for commercial traffic. The Padre went to Mexico City and talked to President Cárdenas about roads. The president said there was no money available. "I do not need money," said Father José. "All I ask is permission to build, and picks and shovels." He got both.

Father José talked every able-bodied man around Caracuarro into working one day a month on the highways. It was slow and terrible work. There were no trees, no water, no shade. When rains came, great stretches of the highway washed out. The workers grew discouraged.

One trouble was that many of the men had never seen an automobile. If they believed in autos at all, they thought of them as they did of Mexico City: a wondrous thing they would never know. With an eye to morale and a bus line,

the little Padre imported a Ford.

As the highways were being built from the inside out, it was impossible for the car to be driven to Caracuaro. So it was taken apart in Tacámbaro and sent to Father José on burro-back.

Since no one in Caracuaro could assemble the pieces, the Padre put the Ford together himself. Not knowing a carburetor from a clutch, he worked by trial and error. When he was finished there were three parts left over. But the machine ran.

Father José took a few weeks to learn to drive. Then, after a horseback inspection of the road, he announced that he was ready to start. Half the countryside turned out to watch the machine on its maiden trip. The Ford crossed the rocky bed of the Caracuaro River, swirled dust along the narrow dirt road, shuddered up 30-degree grades, stampeded burros and horses, sent parrots screaming from treetops. But after eight hours it rolled into Tacámbaro, loose-jointed but lively.

EVEN POLITICIANS keep their promises to the Padre. When he talked to them about a dam for the Caracuaro River, they not only said they would build it—they did build it. The turbines and tons of cement were hauled over the mountains on burro-back. The Caracuaro dam now supplies electricity for an area of sixty square miles and is the heart of an irrigation project which will give the people a chance at last to have a balanced diet. As health officer, Father José is pleased.

The Padre rides 130 miles a week

on horseback to conduct services in ten churches. Nine of them are located in pueblos but the tenth, Paso de Nunez, long stood isolated by itself. When Father José began to read masses there, a few farmers rode in from the country to attend. After church the Padre talked to them. He said that, living alone on remote farms, they could not send their children to school. They could not help their neighbors with crops or band together against outlaws who raided from the hills.

"Why don't you help each other build new houses here, near the church?" he asked. "You could ride out to your farms every day."

Today there are eighteen adobe houses in Paso de Nunez and about twenty temporary huts. A three-man planning commission sees that all houses are solidly built and conform to the general pattern. Everyone in town has given labor to a new school, a city hall and the rebuilt church. They also gave money and labor to build a tiny wooden dam which ensures a year-round water supply for the pueblo.

Comparison of Father José with José María Morelos, hero and martyr of the Mexican War of Independence, does not seem far-fetched to the people around Caracuaro. Both men were born in the state of Michoacán. Both were *mestizos* and proud of their Indian blood. Both were priests in Caracuaro. It was from the old church where Father José now serves that Morelos rode off to lead Mexico's fight for freedom from Spain.

One of the Padre's duties as Custodian of National Property is to look after the one-room house Mo-

relos lived in. Few tourists make the long ride to Caracuaro, so the house is not often visited. But because Father José hates to see anything lie idle, he allows the people to use the Morelos Museum as a practice room for local theatricals. He sweeps out the building himself after each rehearsal.

Father José lives much with the memory of Morelos. When the Caracuaro *fiesta* is held each spring,

he tries to run it exactly as Morelos did. When he renovated the church, Father José decorated it exactly as it was during the time of the Revolution. But when I told the Padre I had heard him compared with Morelos, he became angry.

"Father Morelos was a truly great man," he said, gesturing so violently that the burning tip of his cigarette fell off. "He did things, I only talk."



How It All Started

HENRY VIII of England once found a particularly succulent loin of beef which was set before him so tasty that he drew his sword and impulsively knighted the meat "Sir Loin." And the cut has been referred to as sirloin ever since.—HOWARD HARRIS

HOW DID THE NAME Dixie, or Dixieland, originate? Well, it goes back to before the Civil War when the Citizen's Bank of Louisiana issued a ten dollar bank note. On the back of the note was printed the French word Dix.

The DIX notes were soon being called "Dixies," and Louisiana became known as Dixieland. As the notes spread through the southern states the name Dixieland became the pseudonym for the South.

—STANLEY J. MEYER



"IN THE DOGHOUSE" is no modern phrase. It originated at least a century and a half ago in the evil days of slaving ships. Greedy shipowners packed their ships so full of human cargo that even officers were forced to sleep in wooden boxes built on the poop-deck. Called doghouses, these make-shift shelters were so small that sleeping in them was uncomfortable, and the term gradually assumed its present meaning.

TAKE THAT WORD, *angel*, as applied to the monied folk who back stage-plays. That meaning of the word dates way back to the days of Christopher Columbus.

Contrary to popular belief, it wasn't the good Queen Isabella who financed that intrepid mariner's voyages, but a guy named Luis Sant Angel. So that's how the word angel grew to mean a helper, and eventually became synonymous with the one used to designate the trusting souls who back theatrical ventures.

—HAROLD L. MONROE



WILDERNESS

Shopping Service

by ANDREW H. HEPBURN

"DEAR MARIE:

Yesterday Carmen, she flew out the window and a cat got her, so please to send me a new canary that sings pretty. Beverly Morgan says she didn't yet get the eight red buttons for her sweater, and would you please to hurry. Your friend,
Ruby Lawton."

In the cubicle which serves as her office behind the ticket counter of Alaska Airlines in Anchorage, Marie Dow read the letter. It was the first opened of sixteen in the morning mail. The postmark was Nome. The others came from Homer, McGrath, Ophir, Aniak, Naknek and other hamlets in Alaska. Each contained requests for things as unusual as female canaries, red buttons, violin strings, a gasket for a Model T Ford, a bottle of liver pills, a wedding corsage.

Marie Dow runs a shopping service for the 580 thousand square miles of Alaska. The service is an adjunct of Alaska Airlines. When Ted Law, president of the line in 1944, decided that a shopping service would be a good idea, he had

Marie Dow flies anything anywhere to give the people of the Far North the things they want



two things in mind: to create goodwill for his line and increase cargo revenue. Today, Alaska Airlines is buttressed with prestige, revenues are mounting, and Marie Dow is up to her black and graceful eyebrows in a business which she is sure is the most fascinating one in the world.

In the comparatively few years since Marie was graduated from high school in Tacoma, Washington, she has been a clothing designer, a model, a ready-to-wear buyer and a personnel counsellor in a shipyard. Her varied experience was a help when she turned up in Alaska in 1943, determined to find a new career there.

Her idea is simple and direct: find out what people want, and then get it for them. To do that, she spends little time at her desk in Anchorage. She goes out to meet her customers. She does it so well that wherever she flies in Alaska, she's an honored guest. When the feeder plane carrying Marie "buzzes" a school, for example, pupils and teacher alike rush to the airstrip. And it's not entirely because Marie

has her pockets filled with candy.

Or take Ruby Lawton at Nome, whose canary was eaten by the cat. A month before, Marie had dined with Ruby in her cabin and had heard Carmen sing. In fact, Carmen herself had been an item in an earlier air cargo: one female canary, the manifest had said.

Marie's business, which is growing so fast that it will soon require a staff to handle orders, brings requests from every corner of the vast Alaskan peninsula. Ordinarily she uses the scheduled flights of the Alaskan Airlines. On rare occasions when they can't take her, she uses one of many feeder lines. On one recent trip she started in a DC-3, switched to a four-place float plane, then switched again to a two-place ship on skis which set her down amid a cluster of huts at the edge of the Arctic ice cap.

The merchandise provided by the shopping service is even more varied than the sprawling geography of Alaska. A sheaf of recent orders reads like this:

Naknek, population 152: ten gallons of ice cream, one gray Stetson, radio tubes, Easter candy, yeast, piston rings for truck.

Dillingham, population 278: cartons of chewing gum, white blouse with bow, perfume, fountain pen, portable typewriter, tide book.

Homer, population 325: rifle cartridges, broom, twelve dance records, emery cloth, two gallons of anti-freeze, bulb for Chamber of Commerce movie projector, punching bag, water pump for car.

Kodiak, population 864: two gardenia corsages, flowers for grave, yard goods for home economics class, camera cable release.

Marie goes to great lengths to

fill an order, not alone because of pride in her service but because in almost every case she knows that what is wanted is wanted badly. Take the case of the extra long zippers, ordered at a time when zippers were on the wartime proscribed list. Marie knew that the fisherman needed them desperately. Three pre-war Anchorage coats, belonging to accommodating but puzzled citizens, lost their zippers and acquired buttons so that Marie could fill the request.

Out of thousands of orders received since the service began, she has been stumped only on these items: a marine motor, a make of rifle no longer manufactured, one size 46 housedress, oysters (out of season), and strawberries (same). An order for two pigs had her stumped for awhile, but it was filled at last.

Orders for animals are common. Dogs, canaries, cats and baby chicks are high in favor. Other classifications that come in for repeat orders are auto parts, clothing and food. Sometimes a steady run of orders for the same commodity from one community indicates an ethnological characteristic. Sociologists might make something of the fact that the service in one month handled fifteen hundred cans of snuff for Nome.

Sometimes, Marie provides service instead of merchandise. "Dear Marie," wrote a woman in an isolated village, "I have to go to Anchorage to have my teeth fixed. Can you send someone to stay with the children for a week?" Marie did.

One girl wrote that she was going to be married but didn't know what

she would need, so would Marie help? Marie did: a complete trousseau, as well as wedding bouquets and gifts.

Marie Dow has an enormous enthusiasm for her job, a sincere affection for the clients she serves. The people, she says, are like people everywhere. They get lonely and hungry and homesick. They like to read books and look at pictures and have new clothes. The things she sends to them are the ordinary things that ordinary people want. The only difference is that Alaskans want them more because they are harder to get. They pay

nothing for the shopping service, only the cost of the article plus the air-freight rate.

Marie grows lyrical when she talks about the land itself, from the frozen tundra north of the Arctic Circle to the fog-shrouded inlets of the southeastern islands. She sees it as a land of opportunity for those who have pioneer spirit. She feels that in finding the toothbrushes, the shotgun shells, the pets, the clothing, the books the orders call for, she is helping to tame the wilderness—helping to make Alaska a more habitable and a happier land of opportunity.

Keep Calm with Candy



HAVE you been beating your wife lately? Been boorish to the children? Told off your boss? Your trouble may be that you would like more sugar!

Some folks land in jail on charges ranging from homicide to ringing in false fire alarms, merely because they crave sweets.

Take the case of a hunter who shot to death a woman he'd never seen before. The cause? Well, the man had less than ninety milligrams of sugar per one hundred cubic centimeters of blood, the essential average.

Why are parents cruel to their own children, even though they love them? It seems they cannot help themselves—they're starved for sweets.

Sounds fantastic? Perhaps—if more than 81 million dollars can be wrong. That's what we Americans spend each month in purchasing jelly, candy, cake and pie. Many times more than Grandma did; probably a hundred times as much as little George Washington did;

for all we know he may have chopped down the cherry tree because he *needed* candy!

Big business isn't blind to this—they've found their workers quarrelless, and produce more, with candy. And artists, writers, show-folk display less temperament if their sweet tooth is satisfied.

So—look within your conscience and check these off:

Are you meaner to the children than you want to be?

Do you nag your husband?

Do you dodge too many lampposts when you drive the car?

Do you jostle intentionally when in crowds?

Are you snippy?

Do you quarrel violently one minute, then a second later wonder why you started the whole thing?

If the answer is "yes" buy yourself a candy bar and calm down!

—BESS RITTMAN

The impressions made by your fingertips are
your one indisputable mark of identification

Your FINGERPRINTS Are Your Friends

by WILLIAM STEPHENSON

OUTSIDE, THE warm Missouri sunshine gladdened the hearts of World's Fair patrons, and many a gaily bedecked bustle wiggled to the sprightly tunes of 1904. But inside the cold red brick building a few blocks away, where the International Association of Police Chiefs was holding its convention, the atmosphere was somewhat strained.

"In my right hand I have a set of finger smudges," declared the speaker, a moustached officer from the West Coast, addressing the bulky man in the chair. "You claim that smears like this will positively establish anyone's identity." His voice rose on a note of challenge. "Then tell me, Sergeant Ferrier, the name and criminal record of the possessor of these fingerprints!"

Sergeant J. K. Ferrier, a Scotland Yard man who had come to the St. Louis World's Fair to guard the crown jewels on display in the British Pavilion, looked at the paper thrust into his hand.

"Certainly," he said. "If you will permit me to check with my London office I'll be happy to oblige."

A little later, the sergeant reappeared before the assembled police chiefs. "These prints," he said, "are those of Percy Ogilvie, a pickpocket and con man who was nabbed several times in Britain but has not been seen lately. They think he's left for America. Here is a description of the man, along with his photograph."

The chiefs looked at each other in amazement. This was incredible! With nothing more to go on than a few black smears, this Britisher had positively identified a criminal!

Yet within the year, St. Louis had so far reversed its scoffing attitude as to set up the first municipal fingerprint bureau in America. Identification officials from all over the world, fired by the logic of this simple test, began to plan on having their own nationals classified. In 1905, the U. S. Army inaugurated the system of fingerprinting all its personnel. Thus, with one quick stroke, mankind had started on a system of identification which has proven a powerful safeguard of personal liberty and individuality.

Until that time the world had

searched in vain for the secret of fool-proof identification. People had been tattooed, painted and gauged; intricate patterns and seals had been devised; measurements had been taken of heads, limbs and bodies; families had gone to fantastic lengths to prove their individuality or to settle identities. And yet all the time, the distinguishing marks, as immutable and inviolate as granite, were right at their fingertips.

Today the world recognizes the vital value of fingerprints. Experts are not sure why Nature put them there in the first place, but they think it's because the alternate ridges and depressions strengthen the skin in the same way that a piece of corrugated iron is stronger than a smooth sheet. Also, fingerprints protect the sweat pores, give the hands a better grip on objects and heighten the sense of touch.

But once you've got them, they're yours for life. Short of cutting off your hands and feet, you can't destroy them for any length of time. Your nose may bend, your handwriting can be altered, your hair may fall out or dark glasses may disguise your features, but from the time your first baby smudges blacken the nursery wall, your fingerprints will never change in the slightest.

John Dillinger, Public Enemy No. 1, didn't believe this. At great pain and expense he burned the centers of his fingers with acid,

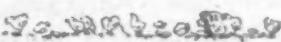
thinking the trick would fool police. If he had sent them an invitation to a party, he couldn't have done them a better service.

"Why should anyone mutilate the middle of his fingers?" asked law officers all over the country when they ran across these prints. The result was that they put every available man to tracing them, figuring that the owner must have something to hide. In time, Dillinger's prints became so well known that even the greenest deputy could spot them at once.

All fingerprints fall into one of ten classifications, distinguished from each other by loops, whorls, arches, tented arches and so on. Out of the average hundred prints, you would get about sixty loops, five arches, and 35 whorls and composites, the latter being combinations of

two or more of the others. Occasionally an accidental—a print that does not conform to any of the ten classifications—turns up, and as a rule is easily catalogued because of its rarity. The loops, since there are so many of them, have to be broken down into smaller classifications; this is done by indicating the direction in which they turn—either toward the thumb or toward the little finger.

One of the most remarkable features about fingerprints—you can examine your own hands for confirmation—is the fact that they vary even from finger to finger. Your index finger may be a whorl,



Next Month in Coronet

See how the miracle
of life begins
with

The Birth of a Chick
a startling picture story
in full color



while the one next to it is likely to be a tented arch. People have been found who have all ten types of prints on their ten fingers.

Heredity has nothing to do with fingerprints, nor has anything but accidental similarity ever been observed even between identical twins. The famous Dionne quintuplets, although extraordinarily alike in most characteristics, possess no common trait as far as their fingerprints go. Even monkeys and other apes have fingerprints like our own, but among them whorls predominate.

ALTHOUGH THEY are grateful that police find good use for fingerprints, identification experts regret that in the minds of the public fingerprints are indelibly linked with crime. For, as has been proven ever since dactyloscopy—the science of fingerprinting — began, your own prints are your greatest safeguard in cases of mistaken identity, amnesia, false arrest and many other emergencies which sometimes crop up.

In 1943, the FBI received fingerprints from a man's hand found in the stomach of a shark caught off Miami. The prints were compared with Navy records of gunners assigned to two tankers sunk off Florida, and they were found to be those of a young Texan who had enlisted in the Naval Reserve a year before. His ship had been sunk by a U-boat.

Last year, the prints of an amnesia victim were sent to the FBI from Fresno, California. In attempting to help the woman, Fresno police asked her to write on her fingerprint card any names that

came to mind. She listed seven, but they failed to produce a clue. She also wrote, however, some street addresses in the Northwest and South, and when the FBI received her prints, they matched a set filed by a woman seeking war work in Portland, Oregon. Her application, of course, bore the correct name and address, and thus her identity was established.

Recently, a mother living in the state of Washington asked the FBI to help in locating her long missing son. She enclosed a set of prints made in 1926, when the son was three years old. The prints were the same as those of a young man who had enlisted in the Navy in 1941. Because fingerprints never change, the sailor was promptly located, and a heart-warming reunion was brought about.

Another strange case in the FBI files involved a young man who wanted to be a doctor and his generous friend. The friend paid half the expenses of a medical education. Years passed, and the student became a successful doctor. Meanwhile the friend had moved away, and the physician tried vainly to locate him in order to repay the old debt.

Finally he appealed to the FBI, and the Bureau posted a "missing person" notice. Five years later the friend was located through a fingerprint card filed when he applied for a job in a war plant. In a letter of thanks to the FBI, the doctor said he and his friend were having Christmas dinner together to celebrate their reunion.

Ninety-nine people out of a hundred leave fingerprints every time they put their hands on a

smooth surface. Once in a while, however, someone turns up whose sweat pores are so few and far between that he doesn't cast a print unless he presses firmly. Some types of workers, too, such as stonemasons, seamstresses and washer-women who use their fingers constantly, will wear away the ridges sufficiently to keep them from registering. A short rest from work, however, soon restores the prints.

Fingerprints on surfaces such as glass, wood and metal may last for weeks, but on paper they do not remain as long. Oxidation, plus the porosity of paper, often absorbs the print, and then it is difficult even to restore it by chemical means. In one case a thief broke into a store, stole a large sum of money and then smashed a window in making his escape. Detectives could not find a clue. A week later one of them thought to look in a rain barrel beside the window. There, to his delight, he found a small piece of glass containing a fingerprint, still legible after immersion. By proving that the print was made on the *inside* of the building, where he had no right to be, the burglar was convicted.

There are quacks who claim your fingerprints reveal that you are the

criminal type, that you are an inveterate gambler, or that you do not make friends easily. This is nonsense. From a single print it is sometimes impossible to tell which finger is indicated, and rarely, except sometimes by size, can a male print be distinguished from a female print.

Authorities believe that fingerprinting everybody in the country—not only criminals but law-abiding citizens—would solve many problems. They point to the fifty thousand people buried in nameless graves every year, to the more than forty million Americans who possess no such thing as a birth certificate. Fingerprinting everybody, say the experts, would protect people from misery, uncertainty and fear.

Whether you agree or disagree with these authorities, look again at your hands. Study the peculiar, twisted lines which cover their surfaces. They are yours, and yours alone. Your fingerprints may not be your fortune—you may never be asked to record them in sculptors' clay or dip them in fresh cement to decorate a famous Hollywood theatre—but take it from the experts, your fingerprints are certainly your friends.

By the Light of a Match

DURING THE WAR much emphasis was placed upon the danger of striking matches in the open during a blackout, but few realized how far the flare of a match could be seen. In Hawaii just before the war, an official test was made. Under favorable conditions—that is a clear, dark night with no haze or mist—the reddish flare was visible when viewed through binoculars for between fifteen and twenty miles, varying with atmospheric conditions.

—COL. A. S. NEWMAN

Picture Story

Behind the Baton



The story of how work and the conductor's guiding stick combine to make great music

The miracles of radio, the electric phonograph and motion pictures in full sound have made Americans more aware of great music than any other people in history. Today the land is dotted with cities, large and small, which support symphony orchestras. Outdoor summer concerts in New York, Philadelphia, Chicago, and Hollywood have all of the drawing power of a World Series baseball game. In Grant Park, Chicago, symphony concerts, with such artists as Lily Pons and Jascha Heifetz, have attracted crowds of 100 thousand eager listeners.

With pride in America's music lovers and music makers, Coronet presents these almost lyrical photographs, many of them by Adrian Siegel of the Philadelphia Orchestra. They tell the story of the hard work, the extensive knowledge, and the love of music which go into the performance and presentation of musical masterpieces.



EUGENE ORMANDY

NELSON EDDY

For those of us who sit and listen, the performance of music seems a glorious and easy achievement. But behind the glamour of footlights and elegant formality, there is a world of hard work.



EUGENE ORMANDY

JASCHA HEIFETZ

In this world of ceaseless rehearsals, musicians and composers are brought together by the conductor. Here the efforts of all three are woven together to make the wonderful sounds which we call music.



EUGENE ORMANDY

FRITZ KREISLER

And here music becomes the magical messenger of universal emotions
—fear and anger, love, sadness, and laughter.



HELEN TRAUBEL

Everyone sings—but only a blessed few of us are born with voices of true grandeur.



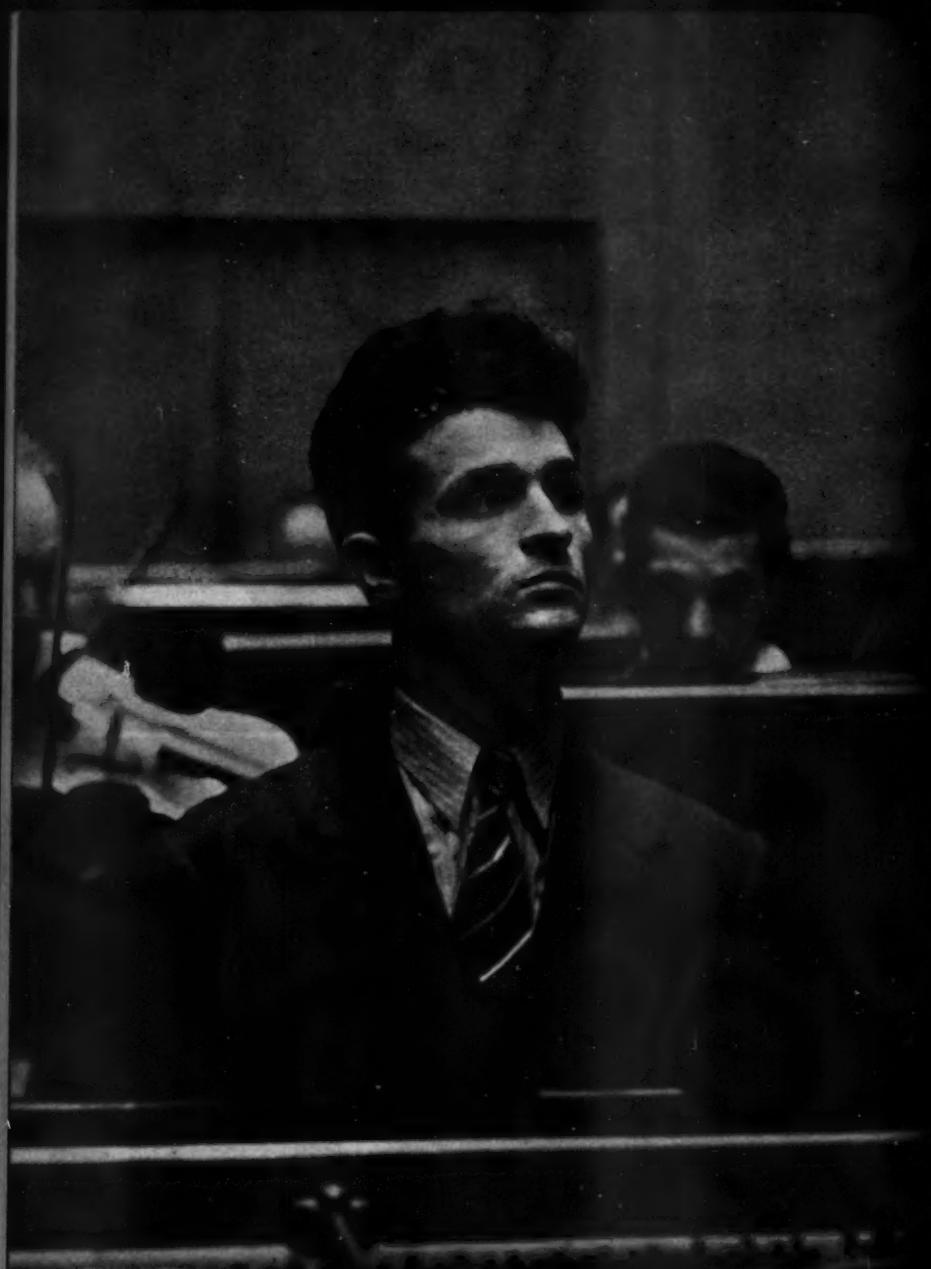
ELEANOR STEBER

And those few—such as Traubel and Steber and Pons—possess vocal cords so delicate that only constant care can protect them from permanent injury.



LILY PONS

Thus the singer is always faced with the danger of over-using her voice. And yet she must rehearse, must practice constantly to make her performance a thing of beauty.



WILLIAM KAPPEL

Along with the singer, musical performances glitter with other brilliant soloists—men and women who, alone on the stage, or at the head of an orchestra, bring entertainment and pleasure to enchanted audiences.



OSCAR LEVANT

These soloists—the pianists, the violinists—make beautiful music out of the little black markings on a piece of paper. They have the talent. But talent is only the beginning.



GENE LIST

The fine musician, no matter who he is, has behind him a lifetime of training, practices daily for many hours. Without such diligence he could not perform before an audience or with a great conductor.



FRITZ KREISLER

For the violinist, countless hours of practice produce hardened finger-tips which help him to create pure, clear tones on his instrument.

EFREM ZIMBALIST



It is just that kind of hard, physical work combined with native talent and insight which makes the performances of mature and accomplished artists seem like feats of effortless inspiration.

JOSEPH SZIGETI



er-
nt.
But while honoring the many soloists who make music a part of American life, most of us look up with reverence to the men who wield the baton—the conductors.



ARTURO TOSCANINI

ALEXANDER HIRSBERG

And today audiences, amateurs, and the whole working world of music hail one man as a practically perfect conductor—Arturo Toscanini.



For such unprecedented acclaim the seventy-nine year old maestro has depended on one thing more than any other—utter devotion to the written music of the composers.



Like all great conductors, Toscanini can look at a musical score and hear precisely how it should sound—how it must have sounded to the composer himself.



MARCEL TABUTÉAU

ARTURO TOSCANINI

It is humility before the great masters and their works which assures Toscanini of his leadership in the world of music and his mastery of musicians.



ARTURO TOSCANINI

JASCHA HEIFETZ

Knowledge and recognition of the inmost lives of such musical immortals as Beethoven and Wagner, as Verdi and Brahms, give to his interpretations the splendour and vitality of truth.



And his phenomenal memory, which holds the music of hundreds of the world's compositions—exactly as they were written—gives him unhesitating surety and vibrant authority.



Playing under Toscanini's baton, even so great an individual artist as Violinist Jascha Heifetz will bow to his guidance.



For Arturo Toscanini's direction is so mixed with fervor and spirit, so sure to be right, that men rise above mere orders, to play with all their hearts.



And in addition to his genius, Toscanini has a perfect ear, which can pick out the finest shades and differences in musical sound.



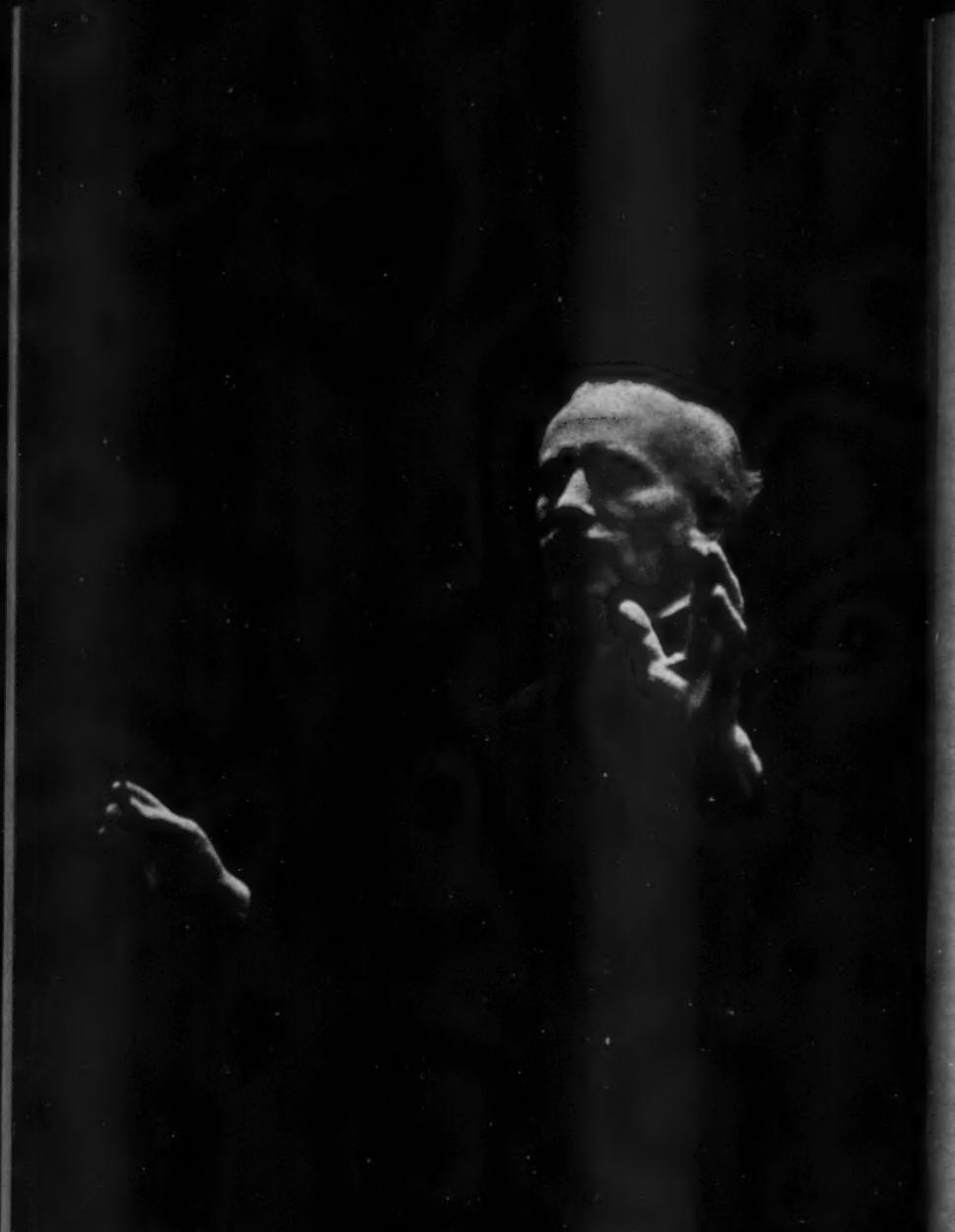
During the rehearsal of a hundred-piece symphony orchestra, he can hear the error of even one man! In such things does his greatness lie.



But the glory of music is ever in its performance. When the hard work has been done, when the conductor's baton has drawn musicians and composer together, then the magic begins to bloom. . . .



Men and women sit tense and waiting, caught in the excitement; all eyes are upon the great conductor.



The very air is impatient. Then out of the darkness and silence, like a burst of sunshine upon a green world, the music begins.

With his device for making elevators safe, an ingenious inventor changed the world's skyline

Otis Takes You UP and DOWN

by CECIL WILLIAMS

THE NEXT TIME you step into an elevator, glance around for the manufacturer's name-plate on the walls or floor. The chances are it will bear the word OTIS—a name that spells elevator from New York City to the Fiji Islands. Without the safety device invented by Elisha Graves Otis almost a hundred years ago, elevators could not move up and down in tall buildings without risk of plummeting passengers to death. Without the elevator, the skyscraper age as we know it would be impossible.

Today, the steel cages that soar more than a hundred stories in the sky are only one evidence of Otis versatility. Otis elevators shuttle up and down mountains and bridge towers, bore through solid rock to caves deep in the earth, sail the seas, and even, so to speak, turn corners. Wherever urban civilization is found on this globe, there you will find the Otis hallmark too, for the company is omnipresent when it comes to raising and lowering the restless human race.

Oddly enough, the elevator is not a modern invention, for Archime-

des, the ingenious Greek, invented the first one in 236 B.C. His rude machine operated on the counter-weight system, similar to freight elevators in small buildings today. Some two thousand years passed before American ingenuity devised an elevator safe for passenger use.

In 1852 Elisha Otis, a foreman in a Yonkers bedstead factory, set out to design an elevator to speed production in his three-story shop. The spring device he hit upon was the first of its kind to inject a new factor of safety into the machine. By an automatic grip upon the guide rails, the carriage was caught and stopped in mid-air—even though the hoisting ropes broke.

The following year, Otis displayed his invention at the Crystal Palace Exhibition in Bryant Park, New York. With a touch of Barnum-like showmanship, he drew crowds from gaudier exhibits to watch his quaint yet revolutionary device. In a box-like contrivance, Otis rose through the air, laboriously hoisted by a small steam engine, to the top of a rectangular frame

25 feet high. From this perch he shouted above the hiss of steam that he was about to cut the hoisting ropes. Excited eyes looked upward; the audience gasped as he hacked the ropes in two. But the elevator, instead of plunging to earth, remained suspended in mid-air.

The man on his magic platform would calmly smile, doff his silk hat, bow low, and announce to the open-mouthed crowd: "Perfectly safe, ladies and gentlemen, perfectly safe!"

Otis' contraption stirred such talk that after his Crystal Palace triumph he started the elevator industry in a Yonkers factory. Four years later the first passenger elevator—an Otis, of course—was installed in a department store on New York's lower Broadway.

The impact of this innovation was sudden and striking. Orders poured in to the Otis company. After consulting the inventor, architects began blueprinting tall and taller buildings. Big-city skylines pyramided like a graph of elevator progress. Within a decade after the Crystal Palace Exhibition, eight-story buildings reared toward the sky in Manhattan—and Otis had a dozen competitors. By the turn of the century, New York was a twenty-story city.

WHEN ELISHA OTIS died in 1861, two sons carried on the business and constantly introduced improvements. In 1878 they invented a governor to check the elevator at excessive speeds. About ten years later, steel cables replaced the rope, marking another safety advance. In 1889, Otis installed the first successful electric elevator, and in

1924 the Otis Signal Control Elevator made possible speeds up to fifteen hundred feet a minute with completely automatic operation.

Today, an estimated 250 thousand elevators in the United States carry 25 billion passengers a year—more than all other public carriers combined, including railroads and busses. New York City boasts the world's fastest (Radio City), and highest-rise (Empire State), and largest (lifting four loaded ten-ton trucks at one time in a Port Authority Building). And in the Starrett-Lehigh Building, elevators carry loaded trucks from the street to various floors—in one emergency lifting fire engines directly to an upper-story blaze.

Manhattan alone accounts for about twenty per cent of the country's elevators—or fifty thousand elevators that carry seventeen million passengers daily, three times the city's traffic in subways, street cars and elevated trains.

Outside New York, elevator installations make up in variety what they may lack in statistics. Tourists at Carlsbad Caverns in New Mexico sink several hundred feet by elevator to the floor of the cave. Honeymooners at Niagara Falls drop nonchalantly through 161 feet of solid rock to view the "Cave of the Winds" behind the Falls. Engineers have cored Whiteface Mountain in the Adirondacks to construct an elevator hoisting sightseers 257 feet to the peak, nearly a mile above sea level.

At the gigantic Goodyear-Zepelin Aircraft Dock in Akron, elevators actually run around the curve of a roof, enabling workmen to get to catwalks within the dome

of the hangar. And tired golfers at a course near Pittsburgh can get a lift for the 69 feet from the 17th green to the 18th tee.

Seagoing elevators on luxury liners transport freight and passengers already being up-and-downed by the elements. Lest squeamish passengers feel that this adds insult to injury already inflicted by the rolling ship, passenger elevators operate at very low speeds on shipboard.

Despite the many mechanical improvements in the elevator since Elisha Otis first defied the laws of gravity, research engineers must still consider the human element. Elevators can be made to travel at terrific speeds, but manufacturers keep in mind the physiological effects upon passengers made ill by sudden changes in atmospheric pressure and velocity. The world's fastest elevators in New York's R.C.A. Building shoot to the 65th floor at a speed of fourteen hundred feet per minute. Even at this "safe" and supposedly comfortable speed, passengers have been seen to swallow surreptitiously to relieve pressure on the ears.

The freak elevator accidents beloved by writers of "who-dunits" can be virtually eliminated when the law enforces modern safety devices. In legally supervised buildings, passengers cannot step or be pushed into an empty shaft because doors of modern shafts won't

open unless the car is there. And the elevator cannot start unless doors are locked tight. In some installations, photo-electric cells prevent doors from slamming on unwary passengers. In case of trouble while between floors, the operator can notify the building superintendent over his car telephone.

As all newspaper readers know, however, safety can be only relative in this atomic age. Elisha Otis, waving confidently from his 25-foot platform at the Crystal Park Exhibit, never dreamed of an Empire State building topping the New York skyline and serviced by the longest freight lift in the world—an Otis elevator, 986 feet from sub-basement to 80th floor.

Still less could he picture the tragedy of last summer when an Army plane crashed into the building. A woman was trapped in an elevator that slid to the sub-cellars. That she was not instantly killed was due to the delaying action of Otis safety devices—devices that were severely damaged by the impact yet slowed the descent of the car to save human life.

Elisha Graves Otis would be proud today to observe the heights to which his pioneering has, quite literally, raised us. Urban life as we know it in America would not be possible without the inventive push given it almost a hundred years ago by the man who helped change the skyline of the world.

Slowly and Painfully

■ "Slowly and painfully man is learning that he must do to others what he would have them do to him."

—ANTHONY EDEN

How a modest government scientist is saving lives in the war against our insect enemies

BUG BOMBARDIER



by ALFRED H. SINKS

JUST BEFORE V-J Day, the government turned over to the public the "bug bomb," one of the most potent weapons of World War II. In its way the bug bomb is as spectacular as its atomic big brother, yet few people know the name of the modest government scientist who conceived the amazing device or the ingenious steps by which he perfected it.

Dr. Lyle Goodhue's bug bombs saved millions of lives in the fever-infested tropics where mosquitoes were harder to fight than Japs. As soon as the war ended manufacturers were eager to find out whether civilians would buy them. But they need not have worried, for last fall buyers snapped up the bombs as they reached the counters of drugstores, groceries, hardware and department stores. During 1946, manufacturers believe, civilians will want millions of them to use in their war on insect pests.

This ceaseless war is no trifling matter. So far man has held his own on only a small fraction of the earth's surface. Each year about 200 million people contract malaria

from mosquito bites. Of these, eight million die. Yellow fever—also insect borne—ends in death for thousands more. House flies account for the spread of tuberculosis, typhoid, enteritis, dysentery. Lice bear typhus; fleas and ticks transmit other diseases. And the minor ravages of insects—those which result neither in illness nor death—reach fantastic proportions. In America, most insect-free of countries, they annually destroy property worth three billion dollars.

Into this global war stepped Dr. Goodhue with the most decisive weapon of all time. The secret of his bomb's effectiveness lies in what the Army calls fragmentation. A bomb that bursts into hundreds of tiny pieces kills more surely than one that breaks into a few big hunks. If you fire into a flock of ducks with birdshot, you hit more than with a single bullet.

The stuff used in the old-fashioned insecticide spray gun consists of droplets of oil, each containing poison. The trouble is that the droplets are pretty big and pretty far apart. No wonder flies and mosqui-

toes seem to be thumbing their noses as they dodge nimbly between those wide-scattered bullets. Another thing: being heavy, droplets fall to the floor in a few seconds. Once there, they do no more work than would the fragments of an anti-aircraft shell fallen to ground.

But unscrew the valve of a bug bomb and what happens? Propelled by pressure the chemical inside spouts forth in a mist, composed of particles only one 2,500,000th of an inch in size. And being small, the particles penetrate into tiniest holes and crevices. Most insects have slight chance to escape.

The story of the bug bomb goes back to the 1920's when young Goodhue was a chemistry student at Iowa State. He had a nimble mind; it sparked new ideas like firecrackers. In fact, it produced them so fast he couldn't test them all in the laboratory, so he began jotting them down in an old notebook.

After chemistry, Goodhue's interest was entomology. A farmer's son, he nursed a grudge against marauding insects. Though he did not yet know it, he was grooming himself for the big fight.

Upon graduation, Goodhue worked as a research chemist for du Pont for awhile, then returned to boss the lab at Iowa State. It was during his brief stay with du Pont that he got out the old notebook and scribbled: "Why could not some light, compressible gas like Freon be used as a medium for the dispersion of insecticides?"

Goodhue didn't have the answer then. Freon—made by du Pont—is the coolant used in refrigerators, an odorless and harmless gas so

light that it actually *boils* at 21 degrees below zero.

Irresistibly the war on bugs drew Goodhue. As soon as he had his doctor's degree at Iowa State, he went to work in the government's Japanese beetle laboratory in New Jersey. A year later, in 1935, he moved to the Bureau of Entomology at Beltsville, Md.

As GOODHUE pursued his own private war, Army and Navy heads worried about what might happen if America were drawn into a war in the East. Out there, insects could kill and maim far more men than the most savage human enemy.

Against mosquitoes the most effective poison is pyrethrin, refined from a chrysanthemum that grows in Africa and the Orient. But from 1939 on, we could get only a fraction of the pyrethrin we'd need to protect a fighting force in the Pacific. The Army appealed to the Bureau of Entomology. There the shy young chemist was already within reach of the answer.

Goodhue was experimenting with poisoned mists, called *aerosols*. His first apparatus was crude—a tank of compressed air, bug-killing fluid, an electric plate. The air squirted fluid against the hot plate. The fluid turned to steam—a bug-killing fog. He learned that pyrethrin dissolved in an aerosol would go five times as far as the same amount dissolved in a spray.

One night as he worked with his contraption and with wire cages filled with doomed insects, Goodhue paused. His hand reached into his desk and came out with the old notebook. There it was—that old note about Freon! All Goodhue had

to do was dissolve his bug killer in Freon, force it under pressure into a strong container, provide a valve for releasing the pressure, and he had the first aerosol bomb.

Goodhue asked manufacturers to make sample bombs. He tested them against everything that flew, crawled, hopped or burrowed. Neighbors brought their pets to his back porch to be aerosoled. Whisk—no more fleas! His small son brought word that the school cafeteria was alive with flies. Goodhue dropped in one morning on his way to work, unscrewed his aerosol bomb for six seconds. Whisk—no more flies! People marveled at the new magic. No frantic pumping, no bath of malodorous oil in the room. One small bomb could be used fifty times without a refill.

At the Bureau of Entomology, Goodhue is still seeking new uses for aerosols in the improvement of crops, new insecticides to put inside his bombs. The fact that he has created an industry, netting millions for manufacturers, only amuses him. So far his only personal gain has been a pat on the back, a copper medal, and a cash prize of a thousand dollars which he divided with a laboratory colleague.

Dr. Goodhue made certain he would never earn a cent from his invention by turning his patent over to the government. He prefers to remain quietly in his laboratory, pursuing his private grudge against the natural enemies of man, improving his invention and pondering other new devices that will benefit all mankind.

Strange Wills

■ ONE OF THE ODDEST wills ever to find its way to probate court was one which was engraved on the back of a sailor's Navy identification disc in microscopic writing.

■ MRS. MARY JERVIS TUCKER of Lexington, North Carolina, stated in her will: "I want to be buried in a nightgown, and covered with a pale pink blanket. I don't want a funeral."

■ MISS ALICE M. COX of London requested in her will that her umbrella, marked with her initials, should be placed in her coffin.

—MOZELLE PAYNE BEAM

■ THEN THERE WAS a man who bequeathed money to a tree. He had watched the oak budding in the spring and seen its leaves turn red in the fall. He had rested under its branches on many a hot summer day. He did not like to think that it might be destroyed, so he made this will for its protection:

"For and in consideration of the great love I bear this tree and the great desire I have for its protection for all time, I convey entire possession of itself and all land within eight feet on all sides."

—LILLIAN HVID RUNNING

Uncle Sam's super-sleuths work night and day to keep the airwaves clear for you



They Keep Their Ears to the Air

by HARRY EDWARD NEAL

THE POST-WAR underworld is soon going to discover that racketeers and radio don't mix. Smugglers, crooked bookmakers, bandits and master-minds who dream of pulling "big jobs" with the help of walkie-talkies and pocket short-wave transmitters will find their dreams are nightmares, thanks to the Radio Intelligence Division of the Federal Communications Commission.

The RID has profited from lessons learned in the war. It has mastered new tricks, new devices, new methods. It has uncovered hundreds of clandestine radio stations used by spies. But after V-J Day, the RID geared itself to peace and prepared to swoop down on domestic short-wave outlaws.

With thousands of returning service men rated as radio experts, able to build and operate short-wave sets, the RID expects more words, more dots and dashes, to be hurled through the air than ever before. In the main they will spark from some 300 thousand licensed stations in the United States, but from past experience the RID knows there will be illegal transmissions from crooks spawned in the lush days of a prosperous peace.

Today the RID can trace a short-wave outlaw almost as fast as you can read this sentence. They use miraculous devices known as Ad-

cock direction finders, located in 25 stations across the country. When a suspicious broadcast is heard, the finders sweep the skies until the signal is located. As each finder picks it up a line of direction is established and plotted on a map. The intersection of the lines from all stations shows the origin of the signal, called "the fix." To determine the exact location, the RID uses mobile direction finders carefully concealed in passenger cars, or even portable "snifters" carried by hand.

Yet the RID's work doesn't consist entirely of turning up short-wave sneaks. Frequently RID has been called upon by the armed forces, by commercial airlines, radio stations and police departments to locate serious interruptions to radio service. Often interference has been traced to power lines, industrial heating plants and neon signs.

In 1943 a Texas oil company, investigating illegal tapping of an oil pipeline, was amazed to learn that the line was apparently being used for transmitting code messages by radio. RID personnel found that the pipeline served both as an antenna and receiver for messages originating in Panama. But they also discovered that it was only a peculiar characteristic of the pipeline which enabled it to re-radiate the impulses. The code

had no connection with the oil thieves, who remained a problem for the company.

Since 1942 the RID has helped to save more than a thousand lost planes. Pilots who lose their bearings and radio for help get it from the RID, which flashes the correct course based on plotted "fixes."

So-called "pranksters" have added to the RID's problems. Take the case of "Fritz," which was cracked before Pearl Harbor. In Illinois the RID heard a strange operator trying to reach a War Department network. He identified himself only as "Fritz" and even talked directly to RID stations, saying he was a member of a "Signal Unit" of the "German Army of Occupation."

Fritz claimed he was broadcasting from Madagascar—but RID direction-finders put their ethereal fingers on him at Peoria, Illinois. Mobile units, packed with sensitive equipment yet looking like passenger cars, cruised about the city. Finally they located the house. When Federal agents and local police entered, the operator, an electrical engineering student, vainly attempted to destroy his equipment. He pleaded guilty and was fined a hundred dollars for violating the Communications Act.

Before the war there were some sixty thousand short-wave amateurs—"hams"—who will soon be back in business, their ranks swelled by

new enthusiasts. With new developments pending in radio, the RID faces a gigantic post-war task. Here is what George E. Sterling, chief of the division, has to say about it:

"In peace we are finding that in radio, as in many other fields, things are not as we left them when war started. In wartime the world moved faster than ever. We are told, for example, that in about three years America will have 300 thousand planes in operation. Many of them will have to be equipped with two-way radio, to communicate with airport stations. Police departments, fire departments, public utilities, airlines and railroads will expand their use of radio.

"Frequency modulation stations will spring up over the country. Television pictures will flash over wide bands in the high frequencies. The use of facsimile radiophoto and international telephone will skyrocket. All these radio waves will have to be kept in the straight and very narrow path, and protected from interference. That is the man-sized job that faces RID."

So whether you like soap operas or symphonies, dots or dashes, be glad that operators of the RID are always ready to go into action to keep your standard broadcasts free from interference. When you turn off your radio theirs will still be on—for day and night, rain or shine, they keep their ears to the air—for you.

Quoteworthy

"WE ARE just in the kindergarten of uncovering things and there is no down curve in science."

—CHARLES F. KETTERING



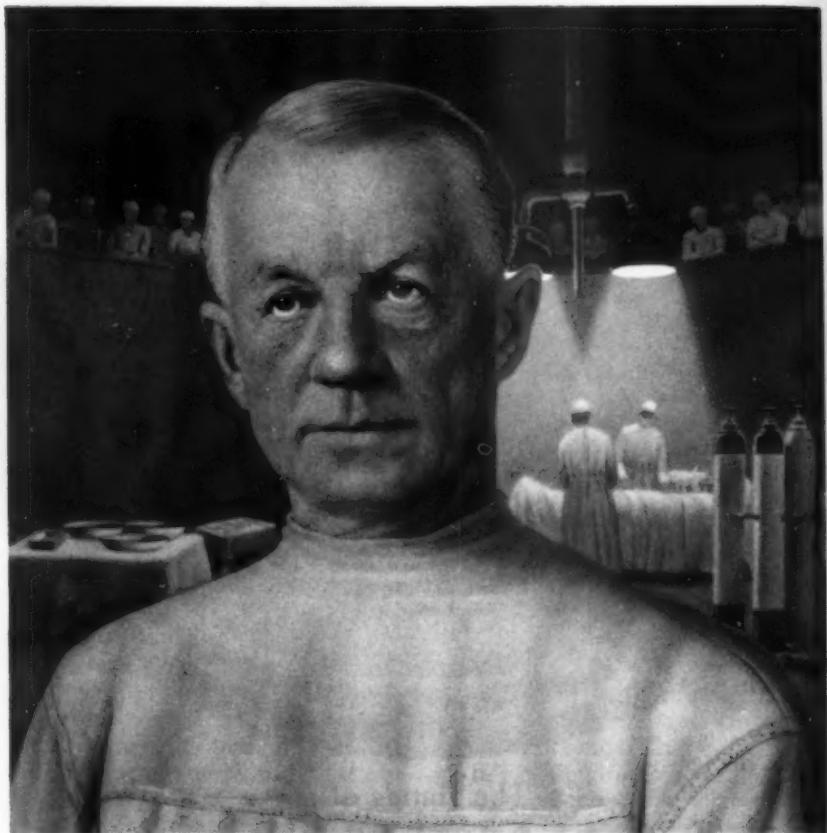
The Hands of *Katharine Cornell*

When Katharine Cornell won her first big role on the American stage, that of Sydney in *A Bill of Divorcement*, she was paralyzed with fright. For Sydney was a complex personality. Miss Cornell says: "As I tried to project the esoteric and elusive pathology of that character, I suddenly found my hands doing a great deal of my acting." And it was her hands, not her face, that arrested the attention of the audience. Her hands, disciplined by years of training, became the living symbol of doom and despair.—CAROL HUGHES

D e
o l:
n s,
en d
re
ut
00
my
ed
ui
ts,
il
io.
ns
ry.
ver
et.
d
ky.
ill
and
ated
an-
eras
be
are
a to
free
urn
be
ine,
ir—

no
G

ONET



Dr. Lahey: *Genius of Surgery*

by J. D. RATCLIFF



HOULD AMERICAN surgeons be asked to name the outstanding general surgeon in the world today, Dr. Frank Howard Lahey of Boston would win by an overwhelming vote. At least two operations bear his name. His thyroid surgery is unsurpassed. Where this operation once killed

one out of five, Lahey's figure is one in 140—and still falling.

He has added enormously to the knowledge of anesthetics and has been a pioneer in two-stage surgery—where the second part of an operation is sometimes performed days or weeks after the first. This approach has converted operations once regarded as almost uniformly

fatal into relatively safe procedures.

The Lahey Clinic of Boston is only a fraction the size of the giant Mayo Clinic in Rochester, Minn., but it offers much the same type of general diagnostic and surgical service. Housed in a modest three-story red brick building, there is no nameplate to identify it as one of the outstanding medical centers of the world—only a marker, No. 605 Commonwealth Avenue. Lahey clinic patients include such names as Myron Taylor, Joseph E. Davies and many another of the world's great. The list also includes a generous sprinkling of Boston's poor.

No matter who the patient is, he must sit in a hard, straight-backed chair in the registration room, waiting his turn. Smoking is not permitted and there are not even dog-eared magazines to read. There is nothing for prospective patients to do but worry about their ills and look at other people who are obviously worrying about theirs.

From time to time, famous people complain about this. Due to their eminence, they think they deserve special consideration. On behalf of her ailing husband, one woman complained to Dr. Lahey.

"The people in that room make this clinic possible," he replied. "Without them, your husband wouldn't be alive today."

Lahey is short, slight, five feet six inches tall, and weighs 140 pounds. He has cropped sandy hair, and the kind of fine, delicate hands good surgeons are generally supposed to have. Now 65, he

looks like a man in his early fifties.

In a great many respects, the founder of the clinic resembles the late Sir William Osler. In his day, Osler led in the field of internal medicine. Today, Lahey leads in the field of surgery. In large part, the reputations of both men can be traced to their outstanding ability as teachers. To study under Osler at Johns Hopkins was a privilege. To work under Lahey is one of the choicest plums that can fall to any young surgeon.

Lahey operations make medical news. Each afternoon the Clinic publishes the program of surgery for the following day. The clinic itself has no operating facilities, all surgical work being done in various Boston hospitals. The balcony of Lahey's operating theatre is always crowded and a few chosen visitors are permitted to stand beside the operating table. These visitors come from every country in the world.

Lahey has a dramatic flair about him, common to leaders in every field. He enters the operating room ten minutes before he is scheduled, brisk and courteous. He wears a blue-gray operating gown and cap. The blue-gray gives less light reflection than white.

Meanwhile, the anesthetized patient has been wheeled into the room. For benefit of visitors, Lahey gives a brief summary of the case, perhaps making a few prophetic remarks about difficulties that may be encountered. Such a summary might run like this:

"The patient before us is 38



years old. In 1942 he had an appendectomy. Last year his gall bladder was removed. Our diagnosis indicates an obstruction of the common bile duct. Unless this obstruction is removed you may well guess the consequences.

"The difficulty facing us here is this: we may be quite sure that the abdomen contains a mass of scar tissue. We will almost surely discover that the remnants of the bile duct are shredded and encased in this tissue. Repairing this damage will be a long, tedious job. We may expect to be here for four hours, even longer.

"We are now ready to begin. We must exercise the greatest care in going through the lining of the abdominal cavity. It is quite possible that the intestine may be adhering to this lining. If it is, we run the risk of puncturing this segment of the intestine, emptying its contents into the cavity with disastrous results. Gently now, gently . . ."

The intestine is adhering to the peritoneum, at the exact spot where the incision is made.



LAHEY never permits anyone in his operating room to forget that a human life is in the balance. When he makes a mistake, he calls attention to it. From time to time he petulantly remarks to students: "I have made all the mistakes in the book and I don't see why you have to repeat them."

Although Dr. Lahey will deny it, a good part of his work is correcting mistakes made by other surgeons. In a great many cases his operating table is a court of last

resort. Because of this, the atmosphere of the room is necessarily tense. He has little regard for surgeons who pride themselves on speed in their work. He stresses patience, care, gentleness.

As he works, Lahey carries on a steady monologue. "Observe, gentlemen, this interesting situation . . . We find ourselves in a tight spot here. Let us see if we can extricate ourselves. . . . Step up and look carefully, for this is something you will not encounter often. . . ."

Much of Lahey's tremendous reputation rests on the quality of his team of assistants. They work together with the fine precision of a professional football backfield.

A great many hospitals permit any nurse available to drip ether on an ether cone. Lahey insists on an M.D. trained in the field. In a sense, the anesthetist is the representative of the patient. It is his job to watch pulse, heartbeat, cyanosis, respiration—and let the surgeon concentrate on his work. He orders transfusion and other restorative measures if he sees the patient is beginning to fail. He can—and frequently does—decide that surgery should stop, that the patient can stand no more.

Although different anesthetists serve on the Lahey team, the operating nurse is always the same: Blanche Wallace. She has been with Lahey 24 years. She is silent, efficient, nerveless, and has an almost uncanny ability to anticipate Lahey's wants. Only in the rarest instances does he name the instrument he needs next. He simply holds out his hand, keeping his eye on the field of surgical activity. Miss Wallace puts the scalpel, re-

tractor, clamp, silk in the outstretched hand.

In moments of crisis, Lahey has never been known to lose either his head or his nerve. If anything, he becomes even calmer, explaining what brought on the crisis and his campaign to combat it. He accepts full responsibility, never suggesting that anyone else might share blame. Even in such tense moments, he never loses his good manners. He asks for better light, or his magnifying spectacles which enlarge the organ under scrutiny $2\frac{1}{2}$ times—but he always adds, *please*.

At the same time Lahey is coldly merciless with a bungling assistant: "You cannot afford to *think* something is right. You must *know*."

Lahey's willingness to accept full responsibility—and blame—was tragically demonstrated in 1938. Almost all inhalation anesthetics are highly explosive. Every hospital fears the violent consequences that may come if a spark of static electricity sets off ether, ethylene or cyclopropane. After more than twenty thousand uneventful operations, calamity caught up with the Lahey Clinic. A static spark ignited cyclopropane and the explosion carried into the patient's lung, bringing instant death.

Most surgeons would have tugged all available wires to keep such news out of the papers. Lahey called every newspaper in Boston, giving complete details. Then he took a second, more important, step. He backed a research project at the Massachusetts Institute of Technology which led to new methods of controlling dangerous static.

Lahey's—and his clinic's—most famous operation is the one for

toxic goiter, caused by the thyroid gland running wild. Victims of this disease are sleepless, nervous. They have enormous appetites, yet burn food so rapidly that they remain thin and emaciated. Surgical correction consists of incising the neck along one of its natural folds so the scar won't show. As much as four-fifths of the thyroid is removed.

When Lahey entered the field before World War I, a grim prognosis always attached to thyroid surgery. Many competent surgeons were satisfied if no more than 20 per cent of their patients died. As a young man just out of Harvard Medical School, Lahey set out to improve this dismal situation. He was quick to realize that such patients were always in a state of high excitement, and that crude methods of administering anesthesia only aggravated this state. For the traditional ether cone, with its attendant terrors, he substituted gentler anesthetics which would instantly put patients into a quiet sleep.

Results of his extensive researches show up in clinic results in the thyroid operation. Out of more than 24 thousand such operations there have been but 187 deaths—a mortality rate of 0.78 per cent. One of the deaths, incidentally, came when a patient on the way home tumbled down a flight of stairs and cracked his skull.

Lahey is a firm believer in two-stage surgery in bad-risk patients. If a thyroid patient, for example, is in a highly toxic state he may decide to remove a portion of the left side of the gland. Then, six weeks later, he will remove a portion of the right side. Such a procedure minimizes the chance of shock and

complete collapse of a patient—usual harbingers of death.

Another of his operations is for correcting a diverticulum of the esophagus. This is a pouch in the esophagus in which food lodges, often becoming a focal point of infection. Any surgery in this area is hazardous because of the maze of vital blood vessels and nerves. The esophagus must be exposed, the pouch removed. Then plastic repair of the esophagus is done. This is one of the most difficult of all operations, but Lahey makes it easy.



FRANCIS HOWARD LAHEY was born at Haverhill, Mass., June 1, 1880. While a student at Harvard he decided he didn't like the name Francis, and changed it to Frank. His father was a prosperous construction man from North Ireland, a member of the bridge-building firm of Fletcher & Lahey. The elder Lahey insisted that his son study engineering, but the younger Lahey was equally insistent that he study medicine.

He received his M.D. degree from Harvard in 1904, and later returned there to serve on the faculty. In 1913 Lahey joined the Tufts faculty to teach surgery. When World War I came along he joined the Army, ended up as Chief of Surgery in Hospital 30—an evacuation hospital in France.

Lahey began to realize his own limitations. "I am a darn good surgeon, and not much else," he told a friend. Sick people needed more complete care than any one man could give them. That meant a clinic, a gathering of experts rep-

resenting all branches of medicine.

His close friends, Will and Charlie Mayo, had made a magnificent success of such a clinic in the Midwest. Lahey proposed to start one in the East, in Boston. With three associates he rented a small corner building, modestly located behind a barberry hedge at 605 Commonwealth Avenue. This was the Lahey Clinic, founded in 1922.

Many individual physicians profess to dislike clinic-type practice, contending that it represents assembly-line medicine in which all personal relationship between physician and patient is lost. Such a charge hardly bears close scrutiny. If such a situation existed, and were distasteful to patients, clinics like Lahey's and the Mayos' would soon be out of business.

A large part of the success of the Lahey Clinic traces to the personality of the founder. He is courteous and affable, in a restrained New England manner. His work is good. Lahey knows this, but he doesn't permit this knowledge to make him either officious or autocratic.

He is a good businessman, who supervises all clinic purchases. He knows Boston real estate, and young clinic members will never buy a house without consulting him.

In public speaking he has the same confident manner that he has in his operating room. He also has a gift of concise phrase. Because of these things he is one of the most sought-after speakers in the medical profession. Let word leak out that Lahey is filling a speaking engagement in Seattle and medical societies all along the way will try to flag him off.

In almost everything he does,

Lahey is a perfectionist. Several years ago he took up golf and was a hopeless duffer. He would not permit such a condition to exist for long. He analyzed his strokes, and practiced every spare moment he had. Now, at 65, he plays in the mid-80s.

He trained his own hunting dogs, and again nothing short of the best would do. His dogs won two national championships in the amateur class—which meant that they had to be trained and managed by their owner. He is a crack shot and at one time had a large private shooting preserve in Alabama—abandoned because of the stress of war duties.

War duties included enough tasks to crush a less disciplined person. As president of the American Medical Association when war broke out, he drew the job of organizing machinery to select more than sixty thousand doctors to serve in the armed forces. He was chairman of the Navy's Medical Consultant Board; in that capacity he had to inspect repeatedly every naval hospital in the United States and most of them in the Pacific theatre. There were dozens of smaller jobs as well — such as training large groups of Navy surgeons in the use of spinal anesthesia.

These activities cut into his time at the clinic. In normal years he performs about a thousand of the

clinic's ten thousand annual operations. His figure fell to six hundred or seven hundred.

The Lahey day begins at 6 o'clock. He has breakfast with his wife at 7. By 8 he is ready to start operating—usually at Baptist or Deaconess Hospital. He is chief of surgery at both. He finishes the morning's work in time to be home for lunch at 1 o'clock. The afternoon is spent at the clinic, seeing patients and attending to various duties. Dinner is at 7 and bed at 10.

The past four years of war have left their mark on many a heavily burdened man. Not Lahey. This is in part due to his ability to take advantage of every moment of leisure. He can, and does, fall asleep on thirty seconds' notice. He neither drinks nor smokes. He avoids lunch with visiting notables, preferring the relaxation of his home, a three-minute walk around the corner from the clinic on Bay State Road. A little before 10 o'clock, he slips quietly out of any social or business gathering. Thus Lahey keeps in rigid training for the strenuous life that he leads.

Only once has his nerve with the knife failed him. The occasion was his sixtieth birthday. Colleagues gave him a party and a magnificent cake, iced with pictures of the Clinic, his favorite dogs, and other familiar items. Lahey didn't have the nerve to cut it.

American Statesmanship

YOU CAN ALWAYS get the truth from an American statesman after he has turned seventy, or given up all hope for the presidency.

—*Treasury of the Familiar*, edited by Ralph Woods

The beast of the desert played a brief part in an almost forgotten bit of U. S. history

How the CAMEL Came to America

by ZULMA STEELE

THE TWO prospectors couldn't believe their eyes. Crazed with thirst, they had dragged themselves at dusk to a puddle on the edge of California's Death Valley and flopped down to try and drink the muddy fluid. When they raised their heads they saw—or did they see?—nine camels silhouetted against the dim horizon.

Could it be mirage, like the streams of clear, cool water that beckoned thirsty men all day? No, for when the beasts caught the smell of humans they snorted in panic and loped away.

At the next town people wouldn't believe the story. Camels wandering wild in the American desert? Camels roamed the Sahara, as every schoolboy knew, but never in this land of horses and mules!

The legend, however, persisted throughout the Southwest. One man reported seeing "a gray camel still wearing a weather-worn saddle." Another told of a wild stray "white with age." One story had it that a prospector led into camp three camels carrying a fortune in nuggets.

The tales were founded on fact. Today, General Douglas MacArthur remembers when a camel wandered into Fort Seldon, New Mexico, where his father, Capt. Arthur MacArthur, was stationed in 1885. To the five-year-old boy it was a

curious and frightening animal, with its nosey head, long curving neck and shambling legs. What young MacArthur saw was a survivor of a herd imported to America in pre-Civil War days by Jefferson Davis in an odd and badly timed government experiment.

In 1848 the United States was seeking a means of opening up the half-million square miles added by the Mexican War. Indians were rife, the dream of a transcontinental railroad seemed remote. In Washington, Maj. Henry Wayne, assistant to the Quartermaster-General, recommended importation of Africa's "ships of the desert" for transportation and military use. Wayne conceived that the beasts, carrying light artillery, would be of help in fighting Indians.

In 1855 Congress appropriated 36 thousand dollars "for the purchase and importation of camels and dromedaries to be employed for military purposes." Secretary of War Davis commissioned Wayne to purchase the animals, and he sailed on the storeship *Supply*.

Wayne's enthusiasm picked up after he studied camels at the London Zoological Gardens and at Pisa, Italy, where on the farm of the Grand Duke of Tuscany he found 250 camels doing the work of a thousand horses. During a side-trip to the Crimea, the British quarter-



master assured Wayne that the Arabian camel could load six hundred pounds and travel thirty miles a day. In battle, a square of camels, legs hobbled, gave protection to a thousand troops.

Encouraged, Wayne set about purchasing camels, at a hundred dollars to four hundred dollars a head, in Tunis, Alexandria and Smyrna. At length he rounded up 33 beasts: 22 Arabian camels, 9 Bactrians (two-humped), and one enormous *booghdee*, a hybrid with one hump. Persuading this ungainly cargo on board ship was no easy matter. When persuasion failed, block and tackle did the trick.

Sailing from Egypt in February, 1856, the three-month voyage to the New World seemed cursed with petty difficulties. Native attendants became seasick, leaving the camels at the mercy of seamen who took none too kindly to their cargo. The first calf born aboard ship died. Another was crushed to death. A third starved because its mother couldn't nurse it during a storm.

Yet despite mishaps, the *Supply* docked at Indianola, Texas, on May 10. People flocked from miles around to see the "circus animals," led by dark-skinned Turks and Arabs in bright costumes and voluminous trousers.

The camels reacted violently to western soil—rearing, kicking, breaking halters. To add to the bedlam, our native animals developed violent racial antagonism. When groups of camels were exercised on Texas roads, horses and mules stamped at the first whiff. Major Wayne had to send a rider ahead to warn teamsters: "Get out of the way! The camels are coming!"

As the novelty wore off, Texans began to look skeptically at these supposed strong beasts with spindly legs. Could they really carry great loads? Wayne staged a demonstration. Upon the hump of one camel he loaded two bales of hay, a heavy load for a mule. Onlookers raised eyebrows, laid bets. Calmly, Wayne added two more bales, enough to flatten a mule. The crowd jeered. But at a word of command the camel loped off with the load.

When the animals regained their land legs, Wayne led his strange caravan up country to Camp Verde, fifty miles from San Antonio. There, in a camel pen, they waited government orders. Summer came, and the animals were sheared for comfort. A Texas miss knit socks from the cuttings and sent a pair to President Pierce. The following February, the *Supply* brought to Texas another load, quite seasick, of 41 camels and ten native tenders.

FINALLY, in 1857, Secretary of War Floyd commissioned Lt. Edward Beale to survey a wagon route from Fort Defiance, New Mexico, to the Colorado River, using camels in the expedition. Beale was an experienced explorer, friend of the fabulous Kit Carson. But the caravan of 28 animals started under a handicap, for at the last moment most of the imported drivers balked, alleging they had not been paid. The expedition started without them. Some of the tenders who did accompany the party knew no more of camels, Beale reported to the Secretary of War, "than any American in New York knows of buffalo."

Despite difficulties, however,

Beale's 48-day expedition was a success. Over more than twelve hundred barren miles of Texas, New Mexico, Arizona and California the camels proved their endurance. After crossing the Colorado, most of the animals went to Fort Tejon near Bakersfield, California.

Beale congratulated himself on completing his trip without loss of a man or a camel. To Washington he reported that "the adaptation of camels to military operations on the plains may now be taken as demonstrated." On this basis, Secretary Floyd recommended the purchase of a thousand more camels.

In Washington, however, the cause of the animals lapsed. Those in hand were dispersed to military posts throughout the Southwest where their reception was far from cordial. Horses and mules stamped at sight, and muleskinners liked them no better. Beale alone held out in their defense, but after an unsuccessful attempt in 1861 to establish a Dromedary Line from Fort Mojave three hundred miles to Los Angeles, even he realized there was little future for the beasts.

After the Civil War started, the Confederates ignored the Union camels. In 1862, President Lincoln signed a bill to construct a trans-

continental railroad, and government interest in less streamlined travel ceased. Orders came from Washington to dispose of the remaining camel herd. The ever-faithful Beale bought some of the beasts for his ranch near Bakersfield and kept them there until they died. One of the most striking sights in the Southwest, he often drove the hundred miles to Los Angeles in a sulky behind a tandem of camels.

The eventual fate of individual camels varies with the tales told throughout the Southwest. For years they kept turning up in circuses and zoos. The last one on record, a descendant of the branded government herd, died in the Los Angeles zoo in 1931. Others escaped to the mining camps of Montana and Nevada. As late as 1875 the Nevada Legislature imposed a fine upon owners guilty of letting camels run at large.

Ten years ago Arizona erected a monument near Quartzsite — the image of a camel, worked in Arizona copper. That memento, and the crumbling ruins of a camel *khan* at old Camp Verde, and the skeleton of a camel on exhibit in the Smithsonian Institution are all that remain today of Jefferson Davis' noble camel experiment.

Answer Yes or No



COUNSEL addressed the witness as follows: "Did you or did you not, on the day in question or at any time previously or subsequently say, or intimate, to the defendant or anyone else, that the statement imputed to you, whether just or unjust, and denied by plaintiff, was a matter of no moment? Answer! Did you or did you not?"

The man in the chair clutched his throat. "Did I or did I not what?" he gasped.

—H. E. ZIMMERMAN



Jens Jensen has spent a lifetime bringing
Nature's beauty to dreary cities and towns

All-American Landscaper

by DIANA J. MOWRER

AMERICANS who know Jens Jensen connect his name with parks. But he is more than an expert in covering city blemishes with beauty spots. Jensen also happens to have revolutionized the art of landscaping and created a new school of designing as American as the Midwest prairies beneath his feet.

Starting at the age of 30, this remarkable Dane laid out parks and playgrounds on Chicago's dreary West Side. He put his ideas not only into gardens, but into books, articles and lectures. At 78 he "retired" in order to open a new kind of school. Now at 85 he's still there, going strong.

The school lies near Ellison Bay, Wisconsin, on a point jutting into Lake Michigan. The Clearing is not just a school of landscaping. Jensen wants it to be a place where young artists can find a new contentment. And the strange thing is that many do. "Art cannot be taught, but in the virgin forest you can read the story of creation, absorb ideas, and your contact with living things stimulates the mind and brings forth new ideas."

As one of his former workmen put it, "If Jensen tells his students that branches will grow on telephone poles, they'll believe him. If I said it, they'd throw me in jail." After a few days at Ellison Bay, I began to understand the power behind this school—Jensen's personal, almost hypnotic, influence. He looks like the Vikings of his native Denmark. Despite white hair and wrinkled face, he is still tall and straight. His teaching is indirect. His students must learn for themselves. What they learn is a matter of values.

"There comes a time," says Jensen, "when we must put away our books and seek from the soil the weight and measure by which we can balance our previous knowledge." In other words, without contact with the outdoors we lose sight of the growing force which is life and are deprived of the urge which spurs us to new accomplishments.

That is why life at The Clearing is mostly in the open. Students dig vegetables, saw logs or wander in the woods. Jensen talks to them about trees and plants, giving them

glimpses of the wisdom of nature.

Seven years ago the first ten students came to The Clearing, each with a thousand dollars for a year's tuition. They stayed only a month. When Jensen realized they didn't belong, he sent them home with money intact. "I'm afraid we just can't give you what you want," he said.

What Jensen demands is sincere interest and originality. If a student paints he must not just paint what he sees. The woods are there to give him ideas for a painting, not the whole painting. Students can dance or model or weave or design houses or learn about landscaping. But always in their own way.

JENSEN STARTED landscaping in the days when American gardens were imported from Italy and England. They were imitations, always very formal. Jensen wanted something free and native. Thus he became the dean of the naturalistic style of landscaping, which now has many followers.

He despises formality and never copies. Creating as he walks, he visualizes the curve of the earth, utilizes every natural feature, knows how each shrub will appear at each season. When finished, his gardens look, in his words, "like God's outdoors, untouched by man."

Jensen dislikes artificiality as much as formality. Once he found an old client busy laying painted bricks along her garden paths. "Why Mrs. Smith," he exclaimed, "I didn't know your garden had grown false teeth!"

Chicagoans consider Columbus Park the best example of Jensen's art. This beautiful section was

carved from the wasteland of Chicago's West Side, a desert of empty lots, garbage dumps and shanties. To cut off the park from its surroundings, he piled earth high around the edges and planted it thickly. Trees and bushes are scattered everywhere, while a lagoon curves around one side. Beyond lie tennis courts, swimming pool, playgrounds, athletic field and theatre—"for the parks belong to the people and should be used."

For American gardens, Jensen insists on native American plants, refusing to use others. Another thing he emphasizes is timing. Something is always happening in his gardens or parks. Flower follows flower through the seasons. Above all he tries to combine seclusion with freedom, the freedom of the plains—"heart and moving force of our great country."

Perhaps the plains remind him of the rolling moors of Denmark where he was born. Much of his boyhood was spent in the open, roaming fields and lanes. His school, one of the famous "*volk* high schools," was buried in lovely gardens, and he still feels it is a child's birthright to attend a school surrounded by green. Glencoe, a suburb of Chicago, is one town that has listened to him. All three of its schools are hidden among trees.

At 24, Jensen sailed for America. His fiancée joined him shortly after, and they were married and went to live in Chicago. Here he naturally gravitated to parks, to him the only spark of life in a booming industrial city.

At first he worked as a laborer. Six years later he laid out the first "American Garden" in Union

Park. Soon he worked on Douglas and Garfield Parks, laid out Humboldt and Columbus. From 1906 to 1909 he was general superintendent of the West Park system. Meantime he had gone into private landscaping, and after 1920, when political changes "persuaded" him to leave the Park Administration, he turned to designing gardens.

Yet more important than gardens, says Jensen, is nature itself. He believes fiercely that we have no right to tamper with that which has been divinely created, and that if we do America will perish. That's why he has never ceased to fight for conservation. The forest preserves of Illinois and Wisconsin are due almost entirely to his efforts.

At Ellison Bay the County Commissioners have asked him to prepare a ten-year conservation plan, providing for sanctuaries and forest preserves, reforestation of tax-delinquent lands unfit for cultivation, and the purchase of land around every school for the study of nature. Jensen also thinks each community should own a tract of land to be used for swimming pools and picnic grounds and, as he puts it, "for whole-

some neighborly development."

Cities, he admits, are necessary today. But they could be made beautiful. The antidote to the ugliness of an industrial society is the earth itself. "The soil is as serious as life. It has been given to us to awaken our minds to a living beauty—to give us hope and courage for a new day."

Jensen preaches partnership of the machine and the land. He seems to feel that although machines took nature away from man, they could now be compelled to give it back to him. May we not, he remarks, live to see most workers residing in the country and commuting to work by plane?

"I believe that the American ideology will emerge again, based on love of the soil, and that Americans will become spiritual leaders of the world."

He predicts a return not *to* nature, but *of* nature. At 85, the landscape gardener of Ellison Bay looks forward confidently to seeing the United States take the lead in inaugurating a New Age. If that age ever comes, surely Jens Jensen will be recognized as its prophet.

Railbirds

RAILROAD OFFICIALS in Ontario, Canada, were surprised one day to receive a message from a station agent which read: "Car No. 403102 has robin's nest on rods. Please arrange for supply of worms at terminal. Mother in charge." Yardmen sprang into action and the worms were ready when the robin car arrived.



PERCHED UNDER THE baggage car of a local train at Sparta, Wisconsin, a little robin began to build a nest. Regardless of the train's movement on its daily runs, she proceeded to lay four blue eggs. By the time they were hatched, the hobo bird had ridden the rods for more than two thousand miles.

—PENCE JAMES



Our Human Comedy

It is the comic aspects which provide that much-desired "lift" in life. To coax your chuckles, therefore, we present the following from the drama of daily living

I WAS STATIONED in Macon, Georgia. While I waited for a bus to the downtown section, a thoughtful resident stopped and took me to town in his car. It was a beautiful, fresh spring morning, and I remarked: "A day like this really makes a person feel like working!"

My Georgia samaritan soberly drawled in reply: "Well, now, I wouldn't go so far as to say that, but I will say it makes a body feel like he *ought* to!"

—LT. EDWARD W. KEYES



J. P. MORGAN once wired a friend, the president of a railroad, that he wished the 10:24 stopped at St. Paul's station in an Adirondack retreat to take on his party.

Five minutes before train time, the great capitalist descended upon the station. At the far end of the platform he found a little man.

"Station agent," barked the great J. P., "have you orders to flag the 10:24?"

"Nope," was the casual reply.

"You mean you're not going to flag the train?"

"Nope," the little man repeated.

With apoplectic fury the great man stared at the agent. In the distance could be heard the shrill whistle of the train.

"You'll hear about this," Morgan shouted. "I'll report you!"

"Keep your shirt on," said the agent. "The 10:24 always stops at this station." —ADRIAN ANDERSON



REFUSED A RAISE in salary from the publishing house for which he wrote hair-raising serials, author Jack Dulz devised a climax for one installment in which the hero was punctured by bullets from a salvo of a hundred rifles. The hero's wounded body was then placed inside a safe equipped with a pick-proof lock. The safe was sealed with a coat of lead. A hundred hungry tarantulas had also been placed inside the safe. To make it more difficult for the hero, poison gas was piped in through a small hole which was then sealed. The safe was thereupon dropped into a lake.

After this installment was published, Dulz resigned. Desperate, the publisher offered a bonus to anyone who could get the hero out of his predicament in time for the next installment. No one could.

One morning, shortly after, Dulz appeared in the office. Asked if he

could rescue his hero, he said he could, but he demanded a raise in return. The publisher readily promised him the increase. Whereupon Dulz brought out the next installment, which began blithely: "Our hero, by superhuman efforts, escaped from the safe . . ."

—WILL YOLEN



THE LATE Irvin Cobb was once a guest at a party in which the conversation turned to spiritualism.

"Are you a clairvoyant, Mr. Cobb?" a woman asked.

"I don't believe so," he replied.

"But do you ever talk in your sleep?" she persisted.

"No," the great humorist replied, "but as a Chautauqua lecturer I often talk in other people's."

—JACK KYTLE



"I HAVE A very unusual animal act," announced the young man to a theatrical booking agent.

"Great Scott!" said the annoyed booking agent. "Animal acts are a dime a dozen."

"I know," persisted the young man, producing a small dog from under his coat, "but this dog is different. He plays the piano."

He placed the dog on a nearby piano and sat back as the pup proceeded to play Chopin's *Polo-naise* clear through.

"I'll give you a thousand dollars a week for the act," offered the manager.

"No," replied the young man.

"Two thousand dollars!"

"Certainly not," said the young

man. "Besides, you haven't seen the whole act. I also have a parrot that sings. The dog accompanies it."

He pulled a parrot from beneath his coat. The bird sang *None but the Lonely Heart* with feeling, the dog assisting at the piano.

The manager was beside himself. "Five thousand dollars a week for both of them," he shouted.

The young man turned to the manager and confessed, "I couldn't go through with it. You see, that parrot can't sing a note really. The dog is a ventriloquist."

—HAWLEY R. EVERHART



A NEW YORKER leaving town for a few days was stumped as to how his tropical fish would get food while he was away. Finally he worked out a simple system for feeding them by long-distance phone.

Using the cardboard out of his shirt, he fashioned a spoonlike device with a long handle, pricked a number of small holes in the spoon end to make a shaker. Removing the cover from the telephone box, he wired the end of the shaker handle to the bell clapper, filled the shaker with fish food, and set the tank on the floor under the telephone box with the shaker poised above the water. Then he headed out of town with a carefree heart.

A hundred miles away, he put in a call to his home, listened complacently to the ringing of the unanswered bell, seeing in his mind's eye a day's supply of fish food being wafted gently onto the water by the vibration.

It worked. The fish were fed.

—W. E. GOLDEN

Did a suspected murderer who escaped punishment finally make his confession to God?

The Case of the NIGHT STROLLER

by ALAN HYND

FRANK R. LOOMIS, who was born into a middle-class family in Brooklyn, Michigan, in 1889, was a man who usually seemed to get what he wanted. At the age of 21, when he decided to become a doctor, he had no difficulty in borrowing the money for his tuition at the University of Michigan. Four years later, while serving his internship at the Metropolitan Hospital in New York City, he decided that he wanted Grace Burns, a pretty hospital nurse, for his wife; so he staged a whirlwind courtship and married her at The Little Church Around the Corner.

In 1927—a fateful year for both Dr. Loomis and his wife—the physician had a lucrative practice on Grand River Avenue, in Detroit. Surgeons with whom he was associated had the highest personal and professional regard for him. The doctor, in his 38th year, was tall, clean-cut and sharp-minded. He lived with his wife and two small children in an expensive home on Marlowe Avenue, within sight of the Schoolcraft Avenue police station. He worked hard and



kept much to himself; his principal relaxation consisted of solitary night strolls near his home.

Women thought Dr. Loomis handsome and exciting; they never seemed to notice that while the right side of his face reflected good will and humor, the left side reflected calculation and cunning.

At exactly five minutes after nine o'clock on February 22, 1927, the receiver was removed from the hook of the old-style telephone in the doctor's home. The operator who answered the signal was unable to get any response. Thinking that the receiver had been removed by a child or by accident, she sent a memorandum to the phone company's trouble department. Forty-five minutes later—at 9:50 o'clock—Dr. Loomis rushed into the Schoolcraft Avenue station house to report that his wife had been murdered. Blood was smeared on the front of his buttoned topcoat.

The physician accompanied detectives back to his home. The night was exceptionally mild for February, almost spring-like, and the

investigators quickly noticed that the Loomis furnace was on full blast and apparently had been for some time. A thermometer registered ninety and all windows were closed.

Mrs. Loomis, fully clothed, lay dead on the sun porch, from which point the lights of the police station, less than two blocks away, were clearly visible. She had been beaten about the head with a blunt instrument, but none was to be found.

"I notice blood on your topcoat, doctor," said one of the detectives. "Did you touch your wife's body?"

"Yes," said Dr. Loomis. "When I came in from a walk a little while ago and found Grace, I examined her to see if she was alive."

"And you have no idea who did this?"

"None whatever." The doctor was calm, almost icily so. "It was no doubt a robbery," he added.

While there were evidences of ransacking, police rejected the robbery theory. Mrs. Loomis wore three expensive rings, easily removed; and they felt that no criminal with brains enough to jimmy a door or a window would commit robbery, then murder, early in the evening in a home so close to a police station.

"It's awfully hot in here, doctor," said a detective, raising a window. "Why don't you take off your topcoat?" Dr. Loomis complied hesitantly. "Those look like bloodstains on your suit, doctor," remarked the detective.

"They must have gotten on there when I picked Grace up to examine her."

"You were wearing your topcoat, buttoned, at the station. Did

you put it on after you examined your wife's body?"

"Yes."

"Did you wear it when you took the walk?"

"Yes."

"Then when you came home and found your wife you stopped to take off your coat before examining her body?"

"Yes. Force of habit. I usually take off my topcoat or overcoat before examining a patient."

"Then how did the stains get on the outside of your topcoat?"

"I leaned down to examine her again after I put it on, to make sure she was dead."

The detectives asked Dr. Loomis to remove his jacket. The right cuff of the garment was stained red, through the lining, yet the cuff of the physician's blue pin-striped shirt was not stained at all.

"When did you put that shirt on, doctor?" Loomis was asked.

"This morning."

"It looks pretty fresh to have been worn all day."

AT THIS POINT a neighbor came in to find out what was going on. When she learned of the murder, her first question was, "Where are the children?" The youngsters were asleep upstairs, but the doctor had not gone up after discovering his wife's body—hardly natural behavior for a father under the circumstances, the detectives thought.

The doctor had a scratch on his face and a cut on his right forefinger. The cut on his face, he explained, was from shaving, the one on his finger from a sterilizing machine in his office.

Dr. Loomis accounted for his

movements thus: he arrived home from his office shortly after 8 o'clock. When his wife refused to accompany him for a walk, he left the house alone just as the clock was striking 9. (One of the detectives had meanwhile learned from the phone company that the receiver of the Loomis phone, which was on the floor when they arrived, had been removed from its hook at 9:05). The doctor met nobody he knew during his walk. He returned home about 9:40, discovered his wife's murder, examined the body, then rushed to the police station.

Neighbors had heard a woman's scream from the Loomis home shortly after 9 o'clock, but had done nothing about it. That information, coupled with the fact that the phone had been knocked over apparently during a death scuffle, at 9:05, fixed the hour of the crime.

* The furnace in the basement had recently been stoked. The detectives suspected that Dr. Loomis had occupied himself between 9:05, the time of the crime, and 9:50, when he appeared in the police station, in burning a blood-stained shirt and whatever instrument had been used to kill his wife.

The detectives attributed the fact that Loomis had not changed his suit to possible criminal cunning on the doctor's part; it would have been natural for a physician to examine his own wife. Then, too, a suit would have been more difficult to dispose of without trace, even in a roaring furnace.

The detectives believed that Dr. Loomis had slain his wife while divested of his jacket and that the

condition of his shirt would have made his alibi untenable. They also believed that the physician had daubed blood on his topcoat to divert attention from his suit until he could dispose of it. The blunt-instrument method of murder, when he had more subtle means at his disposal, they considered merely another example of his cunning. The absence of strange fingerprints anywhere on the premises was considered further evidence of the doctor's guilt.

THE FOLLOWING day, examination of furnace ashes revealed two buttons like those on the doctor's shirts. The physician said the buttons had apparently found their way to the furnace in the debris from a carpet sweeper.

An analysis of the stains on the physician's jacket, trousers and vest convinced a police chemist that a foreign substance was mixed with the blood stains, indicating an effort to remove the stains. An analysis of the topcoat stains supported the theory that they had been daubed on.

Next, a cursory investigation of the dead woman's habits disclosed that because she had feared intruders she had always bolted doors at night. Yet when detectives arrived they found that a door from the yard to the cellar and another door from the cellar to the first floor were unlocked—an incongruous situation, if the doctor had left the house at 9 p.m.

The detectives bluntly told the doctor that they suspected him of his wife's murder.

During long hours of questioning, in which the sleuths used every

legal device to get a confession, Dr. Loomis remained calm and unruffled. "Answer a question for me, gentlemen," he demanded. "What reason would I have had to murder my wife?"

The doctor had his accusers there. The investigators had been unable to unearth evidence of any one of the three principal motives for murder—revenge, the removal of an obstacle, or personal gain. So far as the police were able to establish, he had been happily married, there had been no other woman in his life, and his wife's death could not benefit him financially.

Dr. Loomis had many influential friends and his background seemed spotless. Prosecuting authorities were reluctant to charge him formally with murder in the absence of a motive. So they allowed Dr. Loomis to leave for New Jersey, where the body of his wife was buried.

Upon his return to Detroit, the doctor checked into a hotel and listed his home for sale. His two children went to live with relatives. Dr. Loomis resumed his practice and the manhunters resumed their search for a motive.

Late in March, investigators discovered that the doctor was meeting an attractive divorcee in a speakeasy. The doctor's office records, seized at the time of the murder, disclosed that she had long been a patient of Loomis and was suffering from a lung ailment.

Checking on the movements of

the woman, the officers learned that she had frequently met Dr. Loomis, before his wife's murder, in Detroit speakeasies. They also learned that, just a few weeks before his wife's death, the doctor had obtained a license to practice medicine in Colorado—in a climate beneficial to lung ailments. The police now felt they had found a motive for murder, and Dr. Loomis was charged with the crime.

But at the trial the State was unable to establish a love affair between the physician and his patient. Its evidence was mainly circumstantial—the shirt buttons found in the furnace and the stains on the doctor's suit and topcoat.

Dr. Loomis, pleasant, clinical and still unruffled, made a superb witness for himself. His defense was an alibi. He went out for his customary evening stroll, he testified, and returned to find his wife murdered. He also marshaled a parade of highly-respected character witnesses.

ANOTHER BLOW to the State's case was the testimony of the last patient Loomis had treated the night of the murder: it cast doubt on the contention that Loomis had burned his shirt. The patient testified that the doctor had worn a blue pin-striped shirt, just like the one he wore when he reported his wife's death. The State could not prove that Dr. Loomis had two shirts of the same pattern. Then, too, the contentions that an attempt had

The Life Story of
HARRY HOUDINI

the great magician
will be condensed
for you
in two installments
starting next month

been made to remove the stains on the doctor's suit and that the topcoat stains had been daubed on were refuted by expert defense witnesses. The most deadly blow to the State's case, however, was the testimony of a surprise witness who swore that he had seen the doctor at 9:15—ten minutes after the murder—at a point that would have been a fifteen-minute stroll from the crime scene.

It took the jury slightly more than half an hour to find Dr. Loomis not guilty. Nevertheless, the Detroit police marked the case "Solved," when theoretically they should have continued looking for the murderer.

After his acquittal, Dr. Loomis began to receive anonymous telephone calls. A thirteenth juror—the alternate—had died during the

trial. Some of the callers falsely accused the doctor of indirect responsibility for the man's death. Others posed the question, "Why don't you commit suicide?"

Fifteen months after the murder of Grace Loomis, Dr. Frank Loomis did commit suicide—by inhaling gas in his office. He left a note denying his guilt and ascribing "terrible loneliness" as the reason for his act. Detectives familiar with the man's personality attached significance, however, to the fact that Dr. Loomis had spent the night before his death reading the Bible and had marked the 32nd Psalm:

Blessed is he whose transgression is forgiven, whose sin is covered . . . I acknowledged my sin unto Thee, and mine iniquity have I not hid. I said, I will confess my transgressions unto the Lord; and Thou forgavest the iniquity of my sin . . .



IF YOU'VE been invited to a nice party next week; if a new suit is going to be delivered to you in a few days; if an investment you've made is looking up, you have a rainbow. *Get a rainbow*—think of something bright and shiny that is going to happen to you soon. For the rainbow is the symbol of hope and of youth; nobody ever held a rainbow in his grasp, yet no rainbow ever disappointed anyone who was rainbow-minded.

Yes, "rainbow" is an attitude of mind. If you look for bad things to happen, and they do happen, you repeat "I told you so!" Even if they don't happen you feel bad anyhow. Or take a black view of your past—your disappointments, losses, your hard luck—and

you're ready to throw in the sponge.

But get a rainbow and the past is forgotten! Look to the future in all its flaming colors, and life is again worth living. How nice to dream about that retirement insurance policy you've just bought. What if your retirement is thirty years away! A thirty year rainbow can be just as bright as any other. How wonderful is the rainbow of tomorrow's work, the interesting and pleasant things to be done, if you are only convinced that yours is a "rainbow" job!

And how beautiful is the rainbow of home—coming home after being away a long time, or after a month's trip, or just coming home tonight from work!

—JAMES T. MANGAN

A revolutionary new process is producing luxury garments for the average woman

Something NEW-and CHEAP-in Furs

by MARY CLARKE

WOULD YOU like a luxurious, full-length sheared beaver coat for only 170 dollars, guaranteed to fool the eye of the most suspicious fur expert? Or would you prefer mink, sable, seal or perhaps chinchilla at prices similarly appealing to your post-war pocketbook? Thanks to the stubborn research of a modest and little publicized Mexican scientist, your wish can be granted in 1946.

But that's not all. If you are one of the lucky women who already owns a genuine mink or beaver wrap, you may now have your cherished treasure permanently weather-proofed, and its luster safeguarded against the ravages of wet-heat, dry-heat and the ubiquitous moth. This eye-warming kind of fur-insurance has also been made possible by one of Dr. J. B. Calva's revolutionary processes.

Born 48 years ago in Puebla, Dr. Calva received his secondary schooling in his native country and attended the University of Mexico, where he became professor of organic and inorganic technology. He also served as technical adviser to various commercial research groups in America and Europe. In 1928 Dr. Calva received a degree in chemical engineering from the University of Pennsylvania and the following year he enrolled there for post-graduate work.

That winter—the winter of '29—

was bitterly cold, and Dr. Calva bought a beaver coat. But it proved to be imitation and, to quote him, "the sheep came back." This irked the scientist, so he spent the next fifteen years experimenting until he perfected a plastic process which will, in 36 hours, turn a raw sheepskin into a luxury-fur pelt capable of defying weather, wear and the scrutiny of experts.

To do this, Calva and his six assistant technicians in Minneapolis have developed their own chemicals and designed their own automatic machines. When the pelt emerges from a routine of chemical bath, drying, clipping, polishing and dyeing, the wool fiber is permanently changed to hair form for two-thirds of its length, thus earning its technical description as "Plastic Processed Lambskin." The residue of wool left at the base of the "hairs" adds to the warmth of the garment.

As for wearing qualities, the Better Fabrics Testing Bureau, after submitting Calva fabrics to exhaustive tests, reported that the "fiber has undergone a processed change that may be considered permanent with respect to consumer use." Neither weather nor dry cleaning seems to affect the color and luster of "plastic fur" or its soft, luxurious texture. The fur can be walked on and thoroughly soiled,

then wiped off with a damp cloth to look like new.

Another novel feature of these plastic furs is their ability to take unusual color dyes. Red, burgundy and a white-wine shade are already on the market and in great demand as trimming. And Dr. Calva has also demonstrated that by applying his process to such unmarketable furs as Chinese rat and wallaby (a species of Australian kangaroo), a pelt capable of passing anywhere as sable can be produced.

Calva asserts that the fur doesn't exist that can't be successfully simulated, provided careful attention is paid to choice of the original material and the method of processing.

Straight furs can also be permanently curled. And when you consider that the fibers of genuine furs, treated by the Calva process, are given vastly longer wearing qualities, retain their luster longer and refuse to mat under rain or snow, it is plain that a revolution is taking place in the fur business.

So by next winter, whether your new coat came from a Chinese wharf rat or your old coat originated on the steppes of Siberia, you'll have cause to be grateful to Dr. Calva's first "beaver" ensemble. If the "sheep hadn't come back," American women wouldn't have still another chance to maintain their eminence as the best dressed in the world.

Improving on the Dictionary

Committee—A group that keeps minutes but wastes hours.

Firmness—An admirable quality in ourselves that's regarded as pure stubbornness in other people.

Hobby—Something you go goofy over to keep from going nuts over things in general.

Infant Prodigy—Small child with highly imaginative parents.

In-law—The one law you can't flout.

Joint Account—A bank account in which a husband deposits money and his wife draws it out.

Meteorologist—A guy who looks into a gal's eyes to see whether.

Monologue—Conversation between husband and wife.

Parents—The hardships of a minor's life.

Philosophy—The system of being unhappy intelligently.

Advice—What a man gives when he gets too old to set a bad example.

Average Girl—One who thinks she is "above the average."

Gentleman—One who steps on his cigarette butt so it won't burn the carpet.

Intuition—Suspicion in skirts.

Jitterbugs—Idolesscents in their early nick-o-teens.

Neatness—The one good thing about being bald.

Secret—Something that is hushed about hither and yon.

Old Timer—One who remembers when a bureau was furniture.

Philosopher—A person who always knows what to do until it happens to him.

Parking Lot—A place where you leave your car to have dents made in the fenders.

Principles—Often prejudices, whitewashed and surmounted by a neon halo.

Night Club—An ashtray with music.

With postmen for salesmen, fortunes have been made on shoestring investments

There's Money in the MAIL-ORDER Business

by RHODA RODER

SIXTY YEARS ago a young telegraph operator in a small Minnesota town invested five dollars of his meager earnings in a singular enterprise. He had heard of a factory that was selling pocket watches cheaply and he felt he could resell them profitably to other telegraphers along the line. Using the five dollars for stamps, he wrote the boys that if they wanted a bargain he could get it for them.

When orders and cash poured in he invested his profits in more stamps and kept on circularizing. Before many months had passed he gave up his job to devote himself entirely to his new mail-order business. The young telegrapher was Richard W. Sears, founder of Sears-Roebuck, America's largest mail-order house.

Probably no other business offers better money-making possibilities on a shoestring investment than mail order. You can conduct it from home, with no office overhead. Uncle Sam's postmen become your salesmen, delivering your message to prospective customers everywhere. You don't have to carry

stock, for the public is accustomed to buying sight unseen, cash-in-advance. Although the average small mail-order business grosses between five thousand dollars and fifteen thousand dollars annually, there's no limit. Its possibilities have attracted countless men in desperate financial circumstances, and have rewarded some with fortunes.

E. P. Beaumont of Buffalo was one of these. Unemployed and down to his last dollar, Beaumont persuaded a manufacturer to entrust him with a few knitted ties. Rather than waste precious job-hunting time in house-to-house peddling, Beaumont decided to sell the ties by mail. He scoured the classified directories for a list of businessmen and then, with money borrowed for postage and stationery, mailed a hundred "sell" letters. Seventy orders came back! Reinvesting his profits continuously, Beaumont built up a million-dollar mail-order business.

Another enterprising man created an oasis of profit in a California desert. Russ Nicoll peddled fruit to motorists. With a few dol-

lars that he saved, Nicoll finally bought a small plot beside a desert highway. Hooking the shack that he called home to a tractor, he pulled it to the land and there sold dates to travelers.

But his luck didn't hold, for the highway was soon moved, leaving Nicoll's place isolated. Fortunately he had the names and addresses of his customers in a guest book, so he used them to start a mail-order business. His fancy dates, attractively wrapped, brought orders from every country on earth. Today, Nicoll grows his money on his own date trees, covering acres of land near Thermal, California.

Beaumont and Nicoll made fortunes from selling quality products by mail. But without careful planning their efforts would have failed, for mail order is not easy. Your messages reach people who are reluctant to purchase unless convinced they're getting a real bargain. You must know what people want, how to buy or manufacture it at low cost, and—most important—how to make customers exchange their dollars for it.

In mail order, your message must intrigue the right people. Therefore successful mail-order concerns generally use brokers who sell specialized lists of names and addresses at eight dollars to twenty dollars a thousand. With a proper mailing list you won't send a sales talk on baby bonnets to busy businessmen; instead you'll concentrate on housewives with infants.

Because he compiled a perfect list of customers, John Blair of Warren, Pennsylvania, established a company that today grosses two million dollars a year. It all started

one day in 1910 when Blair, a traveling salesman for a raincoat company, was showing samples to a merchant. An undertaker came into the store and asked for a black raincoat, an item the merchant didn't carry. Luckily, Blair had one in his bag, and he sold it. That gave him an idea: thousands of undertakers were probably shopping for somber coats. He compiled the names of ten thousand undertakers, invested a hundred dollars in postage, and wrote them about his special "undertaker's raincoat."

More than twelve hundred grateful morticians replied. Thereafter, Blair's mailing lists included priests and ministers. He soon was selling men's furnishings to customers in every part of the country.

Blair could only afford a hundred dollars for postage when he started. But generally a mail-order business deliberately starts small to test demand. By the law of averages, two thousand letters are enough to gauge expected sales from subsequent mailings. In some cases, when the commodity will bring a large profit, a return of three per cent is enough to insure success.

DESPITE THE fact that a product has value, and the sales message reaches the proper audience, it still may not sell without skilled persuasion. Robert Collier, New York mail-order expert, has often demonstrated that the proper psychological approach creates buying demand. Years ago, when he was consultant for the *Review of Reviews*, he was told not to bother with the company's stock of O. Henry volumes, which just wouldn't sell. In an idle moment, however, Col-

lier mailed out letters which began with "bargain" appeal, described O. Henry's stories with enthusiasm and color, and urged the prospect to "hurry up" before the books were snapped up. In a year he sold more than fifty thousand sets, worth more than a million dollars.

An alternate method for starting a mail-order business is newspaper and magazine advertising. But there's no capsule formula for an attention-getting ad. The planning of good captions, wording and layout is a fine art. And choosing the proper medium to reach the right audience is as important as good mailing lists. Here, too, the mail-order concern first tests consumer reaction with small ads.

One-inch ads in country newspapers started the first large mail-order house in America. Back in the 1870's, E. C. Allen, an ambitious boy from Augusta, Maine, obtained the formula for a washing compound that women in his neighborhood used for laundering. He printed it on slips of paper and advertised for agents who would pay him ten dollars a hundred or 25 dollars a thousand for the recipe, which sold for a dollar.

Housewives created a storm of demand for the magic formula, because the ingredients could be bought in any store and the compound did make wash day easier.

Within a few months Allen and half a dozen girls were swamped with mail. A year later he was able to pay thirty thousand dollars for advertising various products in the nation's newspapers.

Arthur Murray is another Horatio Alger hero of mail-order advertising. An obscure dance instructor in Atlanta, Georgia, one day he hit on the idea of teaching America to dance by written instructions and dotted-line diagrams of steps. After testing his course through the mails and small advertisements, Murray bought a full page in a magazine with the arresting caption, "How I Became Popular Overnight." He was deluged with forty thousand replies, and so many clamored for personal instruction that he started his dance studios.

You can buy and furnish a home, get a complete wardrobe for the family, purchase all your food, and take courses in almost any subject through the services of thousands of mail-order firms thriving in the U.S. The field has no boundaries.

If you want to switch from buying to selling, all you need is a quality product, a bargain rate and an appealing sales talk. With the same shoestring used by Sears, Beaumont and others, you may be able to set yourself up in a new business that is not only intriguing but profitable.

Most Trains Are Male!

OF THE 725 passenger trains in the United States given names, only two bear feminine appellations—the "Ann Rutledge," operating between Chicago and St. Louis, and the "Pocahontas," running between Norfolk, Cincinnati and Columbus.

—GORDON M. PETERSON

In a time of crisis, Prime Minister Attlee brings vigor and high ideals to his job



by OLGA DAVIDSON

WHEN WINSTON Churchill and his Conservatives were swept from office last July in one of the greatest routs in British political history, the English people, in voting for Clement Richard Attlee, asked for party above personality, for a definite program of government, for nationalization of essential industry.

The man they elected has none of Churchill's sparkle and verve. He is no clever politician, no great scholar, but rather an earnest, sincere man. He is not the party strategist, not the spinner of magic phrases, yet he inspires confidence.

Clem has a short, unimpressive figure which he garbs in good but unfashionable clothes. He drinks in moderation, eats simply, puffs incessantly on his well-known pipe. Throughout the war he went to and from his office by subway.

Attlee is a reader; not as avid as Churchill, but he enjoys social studies, history and as many detective stories as possible. He likes to spend his evenings at home with his wife and four children. Attlee dislikes "aristocratic sports." Once while he was dining at the American Embassy, our ambassador, a great grouse-shooter, asked if he had done any "shooting."

"Oh, yes," replied Clem. "I used to do a lot of it."

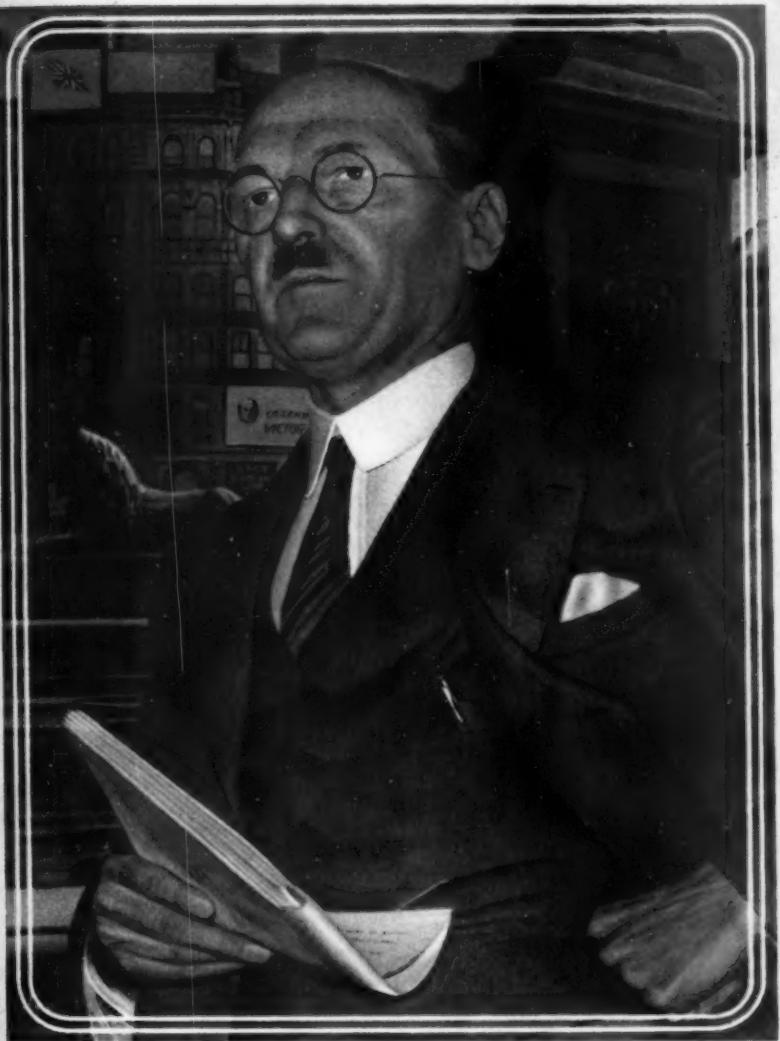
"What did you shoot?"

Britain's Man *of Destiny*

Attlee, remembering his World War I service, slyly answered, "Germans."

Attlee's personality and his devotion to pacifism and internationalism probably mean that the tenets on which British Labor stands will be more important than the man heading the party. The Prime Minister believes that Socialism "is the dominant issue of the twentieth century." But he is opposed to all dictatorships, Right or Left. "I object to dictatorship, whether in blue, green, red or any other kind of shirts, but I also object to dictators in boiled shirts."

The English people are certain that Clem will carry on. They know that Churchill has briefed him on all affairs of government. They know that he brings vigor and high principles to the biggest job in England. They recall that, as a London social worker, he said: "It is time that the unspoken desires of millions should have precedence over the ambitions and prejudices of the few. We of the British Labor Movement offer these principles, which we accept for ourselves, for the acceptance of others. Representing especially the working people, who always suffer most by war, we offer them to the working people of all lands; not, indeed, only to the working people, but to all who seek for peace."



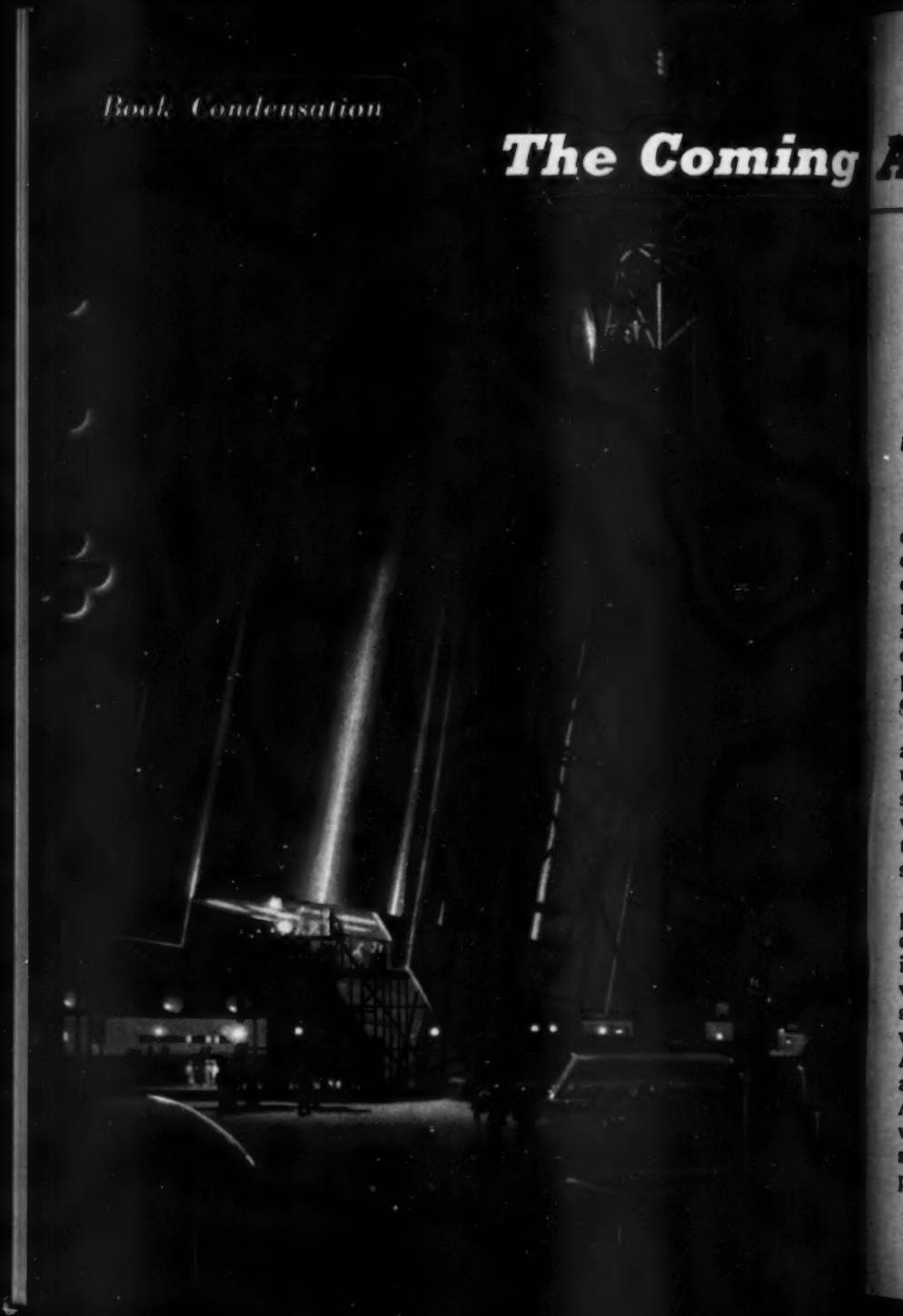
Clement Richard Attlee

PRIME MINISTER OF GREAT BRITAIN

As a member of the "Big Three," he shares the responsibility for fashioning machinery to insure world peace in the atomic age.

Book Condensation

The Coming



g Age of Rocket Power

Foreword: Will rockets supplant the plane and the train as carriers of mail and express? What about mile-a-second passenger flights around the globe? Can science construct a rocket large enough to reach the moon? Here are the answers, written in layman's language by an expert who predicts that rocket power will bring mankind a fuller concept of our world and its place in the universe.

by G. EDWARD PENDRAY

IN THE early dawn a dark object, spitting fire from its tail and emitting a curious throbbing roar, comes darting across the English countryside towards London. It roars ahead, a brainless, pilotless, aerial burden of death, blind yet curiously knowing, persistent, purposeful—and filled with the portent of the day to come.

Thousands of miles away, a plane attacks a submarine. Before the undersea craft can dive, two rockets streak from the plane like spears of vengeance. They strike the conning tower; the submarine falters, then sinks in a swirl of smoke and foam.

At still another place, a jet propelled plane takes off without aid of propellers and with a roar plunges into the sky. At a victory celebration, skyrockets stream upward, trailing fire. Along a stormy coast a ship is wrecked. A rocket flies outward, carrying a life-saving line—scores of passengers are saved.

All these incidents

are manifestations of rocket power. To anyone who reads the newspapers, it is now clear that jet propulsion, rockets and rocket power will hereafter affect the life of every person on this globe, in peace and in war, whether he has any interest in the technical aspects of the subject or not. Jet propulsion is obviously a new force in the world—something that *we must know about and understand*.

Jet propulsion is rocket power. Jet motors, jet planes, robot bombs, war rockets—all are merely different aspects of rocket power. All operate on the same basic principle: jet propulsion—the motor that *thrusts or pushes*, instead of producing rotary motion in a shaft or wheel like the automobile engine.

The rotating lawn sprinkler is a good example of rudimentary rocket power. Streams of water, jetting from the sprinkler nozzles, produce reaction against the nozzle arms to

On the opposite page is a conception of a rocket ship painted by Chesley Bonestell, artist and astronomer. He informs us, as we go to press, that the atomic bomb has already made obsolete the type of ship he has illustrated; that the rocket space ship of tomorrow will be powered by atomic energy and will be equipped with wings. Bonestell does not think it at all inconceivable that man will some day fly to the moon and return safely to earth.

The Coming Age of Rocket Power

make the sprinkler spin. Sea creatures like the squid have been using jet propulsion for millions of years. The squid fills his mantle cavity with water, squirts it out with a powerful muscle convulsion, and the water jet drives him forward swiftly.

The first artificial device to make use of jet propulsion—the skyrocket—was invented more than seven hundred years ago. Today, the simplest form of reaction motor is still that of the skyrocket. There are no moving parts, except the stream of escaping gas. The common notion is that this jet works by pushing against the air. Actually the air in no way helps. It only impedes the action—by getting in the way of the projectile in front and hindering the straight-line ejection of gas behind.

It is something else that drives the rocket. Sir Isaac Newton found the secret more than 250 years ago: "To every action there is always an equal and contrary reaction; the mutual actions of any two bodies are always equal and oppositely directed." So consider the ejected gas from the skyrocket as one "body," the rocket itself as the other. The rocket, forcing the gas to escape, pushes violently toward the earth. The gas, escaping, pushes the rocket as violently toward the sky. And that is the simple principle of jet propulsion.

The railway locomotive transforms only eight to ten per cent of the energy of its coal into useful power. The auto engine delivers 20 to 25 per cent, the plane engine less than 35 per cent. What efficiency may we expect of the reaction

motor? Theoretically it may go as high as 85 per cent, though in motors now available it does not usually exceed 45. To convert this jet power wholly into driving power, however, the motor *must be traveling at or near the speed of its jet*. Now this is of paramount importance, for it follows that the reaction motor *is fully efficient only at high speeds*.

Jet velocities of reaction motors now developed vary from twelve hundred feet a second up to a theoretical seventeen thousand. The smaller figure—the minimum at which a jet craft could travel with efficiency—is about eight hundred miles an hour, or a little more than the speed of sound. The upper figure, which represents a future possibility, is eleven thousand miles an hour, or six times as fast as an artillery shell!

The reaction motor clearly isn't just an alternative or substitute for the gasoline engine. Instead, it opens the way to a new world of velocities, altitudes and powers hitherto denied us, and consequently to a new world of human experience and possibilities.

In the coming age of rocket power we shall become accustomed to enormous power in small engines, we shall reach great altitudes, we shall move at speeds almost beyond our imagination at present. Not only are these the possibilities of rocket power—they are also its requirements!

To Scale the Heights

THE OCEAN of air at the bottom of which we live is one of the greatest unexplored areas of the earth.

by G. Edward Pendray

It is far bigger than the deeps of the sea; more mysterious than the unmapped deserts of Asia; more important in its effects on us, known and unknown, than the polar and mountain regions so painstakingly explored in our generation. The air, above a few utilitarian miles, is an unknown region. It is forbidden to us except through rocket power, for only the rocket can operate in the state of comparative airlessness necessary to explore it.

The first attempts to reach the upper atmosphere were made with the only flying device then available, the kite. But the greatest height managed by kite was about four and a half miles. Manned balloons were used to study the upper air as early as 1784, and in 1901 two daring German balloonists, A. Berson and R. J. Suring, made a flight over Berlin and reached the astonishing altitude for that time of 34,500 feet (about six and a half miles).

Some years elapsed before this early record was bettered. Then, in the late '20s and early '30s a sort of international balloon race developed. One of the first Americans to join the race was Capt. Hawthorne C. Gray, who took off in a balloon from Scott Field, Illinois,

*G. Edward Pendray, one of America's leading rocket experts, was born in Nebraska and educated at the University of Wyoming and later at Columbia. He was an organizer of the American Rocket Society, edited its publication, then called *Astronautics*, and from 1934 to 1936 was the Society's president. Well known as an author and lecturer, Mr. Pendray was the scientist who conceived and directed the Time Capsule project at the New York World's Fair.*

in 1927, and reached an altitude of 42,470 feet. But Capt. Gray lost his life in landing.

To an American team of balloonists finally went the honor of ascending to the highest elevation reached by man. This flight took place in 1935, starting from the Black Hills in South Dakota and ending on a farm on the broad flatlands of southeastern Nebraska. The balloonists were Capt. Albert W. Stevens and Capt. Orvil W. Anderson of the U. S. Army. They reached an altitude of 72,395 feet (nearly fourteen miles).

That manned balloons will ever go much higher is doubtful. The flights are too intricate and difficult; there are safer and less costly ways of getting the data sought. One of the most successful of these is the free sounding balloon, now used by weather men both for routine observations and meteorological research. Sounding balloons with recording instruments have reached altitudes of nearly 22 miles. Small pilot balloons without instruments, but observed from the ground by means of telescopes and theodolites, have gone a mile or two higher. The free balloon record is 24 miles.

WHAT IS KNOWN of the air above 24 miles depends on calculations and estimates; on scientific detective work that takes its clues from observations of the behavior of meteors, auroras, light refraction and radio waves. A great deal has been learned by these methods, but what is needed is a real "sounding" device that can physically reach the heights, measure their phe-

The Coming Age of Rocket Power

nomena directly, and bring some samples back.

The rocket can penetrate the rarefied upper atmosphere because it carries its own oxygen supply. It can exert thrust even where there is no air, because it does not need anything to push against. It can travel swiftly, in a predetermined direction, and come back with its information while the data are still news.

Against these advantages, the rocket burns up a large portion of its mass in making the ascent, and hence must start with a heavy fuel load, leaving relatively little carrying power for instruments. It needs to be directed in flight, even when the flight is vertical, and equipment for doing this is not yet perfected. Finally, many of the instruments carried by the rocket must be especially developed. Those now used in sounding balloons may be too fragile—and speak too slowly—to record atmospheric conditions during a rocket flight.

These are problems that science must solve before we understand the air ocean that surrounds man's living place. Meanwhile, we can speculate on another type of rocket—the mail-carrying kind, designed for commercial use over land distances of five hundred miles or so; a distance to which rockets of load-carrying size could be shot now, if we were determined to undertake the task of building them.

The distance between many of Europe's large cities is less than five hundred miles. In the United States there is heavy mail and express traffic between such points as New York and Washington, Chi-

The World's First Rocket-Post

In 1930 a young Austrian inventor named Friedrich Schmeidl commenced an activity that earned him a unique place in history. By firing six experimental rockets, followed by a public demonstration, he launched the first mail-rocket line on record. His line was operated intermittently for four years, officially beginning on March 2, 1931, when he publicly fired his "V-7" rocket, correctly announced as "the first rocket-post in the world."

It carried 102 letters between the villages of Schockel and Radegund, not far from Graz. The crow-flight distance between the towns was only two miles, but the distance by road was several times as far. Hence the rocket-post was a practical service which was much appreciated.

cago and Cincinnati, San Francisco and Los Angeles, Denver and Santa Fe, Omaha and Minneapolis. Rocket-mail lines capable of shooting up to five hundred miles could link all these cities.

So swift would be this time-and-money-saving service, so free from the vagaries of wind, weather, night, day or the seasons, that it is not difficult to imagine rocket-mail networks linking not only the principal cities of the earth but also spanning deserts, rising over mountains and crossing oceans.

Even if the ultimate practical limit should turn out to be five hundred miles—and this is hard to accept—it would be no real barrier to the covering of tremendous distances by rocket mail. Landing and launching stations could be es-

by G. Edward Pendray

tablished along a route all across the Sahara, for example, linking Cairo with the west coast of Africa. This mail and express service would require only two hours to travel the 36 hundred miles from Cairo to Dakar, and of this time, more than half would be used up at the six or seven interlinking stops. The actual flying time would be only about 56 minutes.

For cross-ocean hopping, island to island relay systems could link Australia to Singapore or the Asiatic mainland by establishing rocket ports along the MacArthur route from Cape York Peninsula to New Guinea to Halmahera to Mindanao to Luzon to Formosa to Shanghai. With only slightly longer range rockets, the North Atlantic could be spanned from France to the United States via England, the Faroe Islands, Iceland, Greenland, northern Labrador and Canada.

ROCKETS OF A thousand-mile range would, of course, greatly increase the speed of transmission over long distances; would potentially bring into the rocket-mail net many more centers of population. Rockets with ranges up to three thousand miles would permit transatlantic mail and express direct from England or the Continent and would open up rocket-mail routes from western Africa to South America.

In fact, it is already possible to make good guesses about these fast messengers of the future. They will be comparatively small in cross-section, sharply pointed to puncture the lower atmosphere through which they will furiously speed. Their bodies will be long and slender,

more like huge darning needles than the fat rockets of scientific-fiction tradition. Steering likely will be accomplished by swiveling the nozzles of the jet motors or by vanes directly in the jet blast.

The rockets will probably not be piloted, except by automatic devices pre-set to course. There will be no need to provide any space for passengers, for mail rockets will be strictly utilitarian devices built for a scientific purpose and carrying nothing that is not needed to accomplish that end.

The motor, or motors, will probably be located in the rear of the rocket. Just ahead will be the robot pilot and other mechanisms which will work the apparatus needed to hold the craft on course. Still further ahead will be fuel and oxygen tanks, pumps for handling the propellants, the valves and controls. The fuel tanks will be so arranged as to maintain a constant center of gravity in the rocket as the propellants are used up.

The payload compartment very likely will be just ahead of the fuel tanks. The nose of the rocket may contain instruments for recording the conditions of the flight or equipment for emitting radio signals announcing the projectile's position. The rocket may also carry radio apparatus for providing some degree of remote control.

The flight of such a projectile will be typical of all rockets in trajectory. It will begin with an ascent at a steep angle, calculated to provide a flight angle of 45 degrees at the end of the powered flight. The rocket will move at an accelerated rate until its fuel is

The Coming Age of Rocket Power

used up. By this time it will be rising toward the highest part of its trajectory, will be traveling at a velocity of a mile or two miles a second—depending on the distance to be covered—and will be fifty to a hundred miles above the surface of the earth. The powered part of the flight may require a minute to a minute and a half; for the rest it will proceed on momentum.

The size of the rockets will depend on the payload, the fuels used, the efficiency of the motors and the distance to be covered. Many variables are involved, but we can get some guidance from the German V-2 rockets used against England. These were simply load-carrying rockets, designed to transport one ton for two hundred miles. At the take-off they weighed twelve tons, of which two-thirds was fuel.

If these proportions should prove typical, we may assume that about nine tons of fuel will be needed to transport one ton in a simple trajectory rocket for two hundred miles. The rocket itself will be a pointed cylinder, forty to fifty feet long, five feet in diameter, with a motor having a starting thrust of about 25 tons.

WHETHER OUR coming age of rocket power will include giant passenger-carrying versions of the mail rocket must depend on many developments, but there is no theoretical reason why it could not do so. Up to the present, no human has ever been a passenger in a true rocket, though numerous animals from mice to roosters have been sent on rocket flights and returned none the worse for it.

The minimum requirement for a human passenger would be an enclosed cell with air at about sea-level pressure, continually enriched with oxygen and purified of excess carbon dioxide. The passenger would also need some shock-absorbing equipment in case of a hard landing. If the take-off acceleration were high, he would need to lie down in a spring-mounted hammock.

He would have to depend entirely on the automatic steering gear of the rocket, for it would be out of the question for him to have any control over these functions. At the necessary velocities, a human pilot's reflexes would be too slow and erratic.

In the first flight he would probably not even see where he was going. His quarters would be cramped; provisions for windows would add excess weight. Even if there were windows, the traveler would see but little. On the upward part of the trip he would perhaps catch a vague glimpse of the ground, rapidly receding. In the stratosphere the world would be buried in haze; the sun's glare would hurt his eyes.

Almost before he could be expected to adjust himself to such rapid changes, he would be on the downward journey again, approaching his destination so swiftly he could enjoy only a momentary glimpse before the slowing rocket, coming in on its wings and vanes, would be seeking the landing place.

The first passenger will spend a cramped and terrifying few minutes far above the earth. He will have nothing whatever to say about the course of the flight or the ending of

by G. Edward Pendray

it. And very likely he will be glad when it is over.

None of these matters, however, is enough to keep engineers from ultimately producing rocket-passenger transportation—if the difficulties in developing mail rockets can be solved. As in mail rockets, the distance flown will depend primarily on the jet velocity, whereas the amount of payload will simply be a question of size and skillful construction. If a ton of mail can be transported by rocket, a suitable rocket can also carry, over the same distance, a ton of passengers.

IT IS EVEN possible to conjecture about the size of the rocket needed. We begin by assuming the motor will have a jet velocity of eight thousand feet per second, enough to enable us to design a rocket that could fly, say, from New York to Pittsburgh—four hundred miles. This speed has been attained in the laboratory, and is quite within the range of what can be anticipated in practice.

The only other assumption is that we can design a rocket capable of actual fabrication, with a payload-structure-fuel ratio of one to two to six. That is, for every ton of payload there would be two tons of structure and six tons of fuel. Ready to fly, the rocket would weigh nine tons. At the end of the firing period, it would only weigh three. And when the pilot and passengers disembarked at their destination, the empty carcass would weigh about two tons.

If such a rocket could be built, preserving the proportions out-

Mail Delivery by Rocket

In 1935, a Brooklyn philatelist, F. W. Kessler, organized an ambitious project for shooting rocket mail from New York to New Jersey across the middle of Greenwood Lake, which lies between the two states. Two large aluminum gliders of fifteen-foot wingspread were constructed, and liquid-fuel motors to drive them were developed after a series of ground tests.

So many unsolved problems had to be overcome in coupling a rocket motor to a glider that many delays were experienced, but the mail shots finally were made on February 2, 1935, across the ice on the lake. The motors lifted the 120-pound planes into the air and propelled them upward at a steep angle of climb. But the short fuel-burning period of about thirty seconds, coupled with several mishaps, reduced the distance covered to a thousand feet.

Nevertheless the experiment marked a milestone in American progress toward rocket transport.

lined and weighing nine tons at the start, it could fly about four hundred miles (less the amount subtracted by the resistance of the air), carrying one ton of payload.

This one ton of payload, however, could not consist wholly of passengers; it must also include the weight of the pilot and the equipment, such as compressors, seats, shock absorbers, and other items that would be necessary for passenger transportation.

From this we may conclude that only about four passengers and the pilot could be carried. Giving them an allowance of two hundred

The Coming Age of Rocket Power

pounds each for person and baggage, only a thousand pounds would remain for all the rest. This is a slender margin, but possibly it could be done.

Now we can look at cost figures. One fact stands out: six tons of fuel will be needed to carry four passengers from New York to Pittsburgh. Twenty cents a gallon—about $2\frac{1}{2}$ cents a pound—would be a reasonable estimate. This brings the fuel bill to 300 dollars, or 75 dollars for each passenger.

It would be foolish to guess what the rocket itself would cost, or how many trips it would make daily (the actual flight-time being about seven minutes a trip) or what overhead would go to make up a large-scale transportation budget. But it seems safe to say that the cost of a ticket would come to three hundred dollars or four hundred dollars at least. Since the rail trip today by Pullman costs only \$20.77, and a plane ticket comes to only \$25.01, this is a steep price to pay for saving, at most, two hours in travel time.

We do not need to assume, however, that the cost factor eliminates the passenger rocket. If the nine-ton size were doubled, the number of passengers to share the cost would be more than doubled, since the problem of hauling passengers involves bulk as well as weight. And despite the fact that other jet-driven craft will operate in the age of rocket power—such as gliders and stratosphere aircraft—the passenger-carrying rocket would present speed competition impossible for others to meet.

As against the dimly possible

fifteen hundred miles an hour top speed of the rocket-boosted turbo-jet plane, true rocket ships for long-distance flying would be able to make—*would have to make*—velocities as high as five thousand miles an hour!

Are We Tough Enough?

CAN HUMANS stand such enormous velocities? Is it sane to think that people will subject themselves to such strains, just to get swiftly from one point to another?

When railroads were first proposed, alarmists said human life would be menaced by traveling at fifteen miles an hour. When speeds of one hundred miles an hour were promised by the early planes, it was asserted that the human body could not stand such velocity. The human body, however, has proved to be a pretty tough article. As passengers on the space-ship Earth, we are at this moment riding around the sun at a speed of almost nineteen miles a second—yet we are not aware of it. It is not velocity that affects the body; we could probably travel at virtually any speed. What makes a difference is the *change in rate* of speed, either increase or decrease.

The increase of speed during the upward flight of a long-distance rocket at the beginning of its journey need not be very high—only about three times gravity. Two thoughts come to mind therefore in considering whether it will be possible for human passengers to ride in rocket ships: (1) what is the maximum acceleration that human beings can stand? and (2) what starting acceleration would be required by a practical long-distance

by G. Edward Pendray

rocket that carried passengers?

The ability of humans to tolerate acceleration has often been studied, since this is a factor in establishing the speed at which a dive-bomber can attack and pull out safely. It is generally accepted that a healthy, normal young man can stand six to seven gravity acceleration (224 feet per second each second) without serious effect, although many temporarily "black out" above this point, owing to reduced blood pressure in the brain.

Blacking out, even at $9g$'s or higher, can usually be prevented by a prone position relative to the force of acceleration. Also special "g-suits" have been developed to help relieve the situation.

Apparently the principal physical effect of acceleration, at least to the point where blood vessels are ruptured or organs damaged, is only a momentary derangement of the circulation, causing faintness or giddiness. The subjective effect, however, is an acute sensation of greatly increased weight. This may be quite distressing, and the average civilian passenger will not relish being subjected to acceleration much beyond three or four times gravity.

If he normally weighs 150 pounds, three gravity will make him feel as though he weighed 450. This is quite a load, but he will be able to tolerate it if lying down and required to do no physical work. At four gravity, his weight would seem to be 600—at five gravity, 750. These pressures would probably be insupportable: it would be possible to breathe only with great effort.

From all this we may safely con-

clude that the maximum practical acceleration permissible to a passenger-carrying rocket would be three or four gravity, or 96 to 128 feet per second each second. Yet acceleration is not the whole story. The psychological difficulties in rocket flight might be less easy for the passengers to take than the physical ones.

The rocket is accelerated only for a brief part of its journey—the first minute or two will be enough at $3g$ to provide the velocity needed. The fuel by that time having been expended, the motors will cease operation. Instantly the passengers will pass from accelerated flight, in which their normal weight will seem to have been multiplied three or more times, to a condition the physicists call "free fall," *in which they will seem to weigh nothing at all.*

Absolute weightlessness is a condition to which no human has actually been subjected, and hence we have no way of knowing bodily reactions. Possibly there will be no unpleasant physical effects, but there are bound to be psychological ones, the extent of which we cannot now estimate.

These sensations will be matched by other queer experiences. Since everything in the rocket ship is also in free fall, none of the objects riding with the passengers will seem to have weight either. Assuming passengers are hungry and food is available, they will find it impossible to eat solids from plates or move them to the mouth in spoons or forks, for foods will simply float away in the direction of the push. Unless pierced by the fork, they

The Coming Age of Rocket Power

will waft gently to the ceiling. Hence if nourishment is to be taken at all, it will have to be served in collapsible tubes, like toothpaste, and squirted into the mouth.

Liquid in open containers will be impossible to drink. A glassful of water would float out of the glass in a large and cohesive globule. If touched, its surface tension would cause it to crawl wetly over the person, like an octopus. Liquids will have to be served from collapsible containers like hot water bottles.

The passengers will have to be strapped to bunks or hammocks, for if they attempted to move during the period of free fall, they would likely bump into the ceiling. For the pilot there will have to be toe-straps to engage his feet, or perhaps he can use steel-soled shoes, magnetized enough to cling to the metal floor of the cabin.

At least one more experience will be facing the passengers before the journey is done. What goes up must come down. If the rocket is carrying human freight, it cannot come down as rapidly or bumpily as though the payload were express.

To match the acceleration of upward flight, the rocket ship will now need to decelerate. A commonly suggested solution is to restart the motors, this time in the direction of flight. This would require the expenditure of more fuel, a supply of which would have to be retained in the tanks. But this precaution, because of added weight, would be disastrous to our project.

Why not let the atmosphere do the stopping for us—adding a few dozen miles to the length of the flight in the bargain? This could be

done if the rocket were equipped with retractable wings and tail surfaces, folded during the beginning and middle of the journey and opened as the projectile falls toward the earth. In the lower stratosphere, the density of air, at the high speed of the falling rocket, should be enough to make the wings take hold. The rocket is mostly empty now, and will itself provide lifting surface when the wings give control.

Here too is where the pilot begins to earn the extra fuel his passage has cost. It is his job to nurse the last yards of distance out of the glide and bring the ship gently to its berth at the rocket port.

Now you are entitled to believe in the possibility of the passenger rocket ship or not, as you please. But you cannot dismiss it as an impossibility. If development follows the sequence that rocket engineers expect—from thruster to sounding rocket to mail rocket—it is logical to assume that the final step can be taken too.

Certainly the rocket ship offers fascinating conjectures. A hurried businessman, for example, would be able to take off from Paris for New York, from New York to Los Angeles, and fly faster than the sun. As he speeds westward in his high, celestial trajectory, the day will become younger. He will, in fact, *actually save time by traveling!*

Can We Reach the Moon?

WHENEVER ROCKETS are discussed, someone always asks: "Would it really be possible to shoot to the moon?" Every man who deals with rockets has by now

by G. Edward Pendray

developed a favorite reply—but it still remains the greatest unanswered question of all. There is, of course, some limit beyond which the rocket cannot be pushed. Yet nobody today knows what that limit may be. At least the rocket offers a theoretical way to escape the earth, and thus possibly to reach the moon or planets.

The problem of space-flight is basically only an extension of the already familiar sounding-rocket problem. To shoot five miles high, and to shoot 240 thousand miles high, are qualitatively the same thing, though of course enormously different in degree. When we begin to consider shooting as far as the moon, we must take the peculiarities of gravitation into fuller account.

The well-known "law" of gravitation asserts that all the bodies in the universe attract each other in proportion to their masses, and inversely as the square of the distance between them. Thus the earth's attractive force extends to infinity, but it nevertheless decreases with distance—and rather rapidly.

At some four thousand miles above sea level it is only one-fourth as great as at the surface. Thus an object weighing four pounds at sea level would weigh only one pound at four thousand miles. At twelve thousand, the same object would weigh only a quarter of a pound: at 28 thousand, only one ounce. *But it can never get so far away from the earth that it weighs nothing.* The attraction extends theoretically to the outermost reaches of the universe.

Now this force of gravitation must somehow be overcome before

we can reach the moon or a planet. We all know that a ball thrown into the air always returns. The harder it is thrown, the farther it will fly, but it must come back again. There is a velocity, however, at which such an object, thrown away from the earth's center, will never return. This *speed of liberation* from the earth is just 6.64 miles a second. A body given such a speed will forever escape the planet, continuing to fly away until it encounters another body with a gravitational field powerful enough to draw it in.

If the object arrives at the orbit of the moon at a time when the moon is also at that point, it will successfully make the lunar journey. If it misses the moon, it will be drawn toward the sun, but may nevertheless make safe haven on Venus, some 25 million miles away, provided Venus is in exactly the right place in her orbit to meet the falling projectile.

If the object is to be projected toward Mars, however, a speed of seven miles a second will not be enough. For Mars is in the direction opposite the sun, and to reach that planet the projectile must also move against the sun's gravitational field, which is more powerful than the earth's. At the distance of the earth, the speed of liberation from the sun is 26.2 miles a second. Therefore a body would have to leave the earth with at least that velocity before it could reach Mars, 35 million miles away.

NOW WE BEGIN to see the outlines of the interplanetary problem. We shall have to build a rocket capable of shooting away from the

The Coming Age of Rocket Power

earth at seven miles a second—ample to carry it to the moon. Obviously unless it were a very large rocket it would be ill-suited for human passage. Moreover, it might be impractical, if not inhuman, to send a living voyager on a journey of such hazard until it was certain the trip would be a success. At the first shot, it would be best to dispatch some significant but non-living cargo—something that could signal back to earth that the moon had been hit.

Such an idea was suggested by the late Dr. Robert H. Goddard, pioneer rocket expert, in 1919. He proposed that flash powder be sent to the moon and discharged at the surface, indicating by its brilliant light that the rocket had reached its mark. He made some ingenious experiments to determine the amount of powder needed, and concluded that as small a quantity as 2.67 pounds would produce a flash strong enough to be "just visible" from the earth in a telescope of one-foot aperture. If the moon investigators wished to be extra generous, a "strikingly visible" flash could be produced with 13.82 pounds.

These quantities seem incredibly small. Weather and astronomical conditions would have to be exactly right for a successful experiment. Hence other suggestions have been offered. Several experimenters have proposed that a charge of high explosive be sent instead of flash powder. It would blow a crater in the moon, permanent evidence of man's first success in contacting his heavenly neighbor. Lampblack, plaster of paris, a fluorescent or

phosphorescent powder, or brilliant blue, green or red dyes might be mixed with the explosive to be splashed around the crater, making it easier to locate. Yet whatever materials are used to mark the target, we can assume that they will be available when the first rocket trip to the moon is attempted.

Meanwhile, how can a small rocket attain the required speed of liberation, carrying a payload, say, of only a hundred pounds? If we had a motor capable of delivering a jet velocity of seven miles a second, the problem would be simple. But at present there is no known way of constructing such a motor. Therefore we can only count definitely on velocities of six thousand to seven thousand feet a second. If we are to be thus limited, we must find out how to build a rocket that will push itself to a speed about six times the velocity of its own jet.

Theoretically we could do it. But calculations based on the theory of mass ratios show that a rocket able to give itself such speed would have to be constructed of a fuel-weight ratio of about 404 to 1; that is, of every 405 pounds of rocket at the start, 404 pounds would have to be fuel. The construction of such a rocket is of course out of the question, even on paper.

What about a multiple or step-rocket, then? Assuming that we are going to try it with our reliable motor of six thousand to seven thousand feet velocity, we will need at least six steps to do the job. If the jet speed is 62 hundred feet a second, six steps will provide a total velocity of 37 thousand feet—the escape velocity—for the final frag-

by G. Edward Pendray

ment of the projectile carrying our flash powder.

Obviously the starting weight of such a multiple rocket will mount up pretty fast. If the final step—the one intended to reach the moon—contains one hundred pounds of payload, two hundred pounds of structure and six hundred pounds of fuel—a reasonable proportion—this little section alone will weigh nine hundred pounds. But the smallest step is only the payload of the next bigger one. So, preserving the same proportions, we have for Step 2: nine hundred pounds of payload, 18 hundred pounds of structure and 54 hundred pounds of fuel—a total so far of 81 hundred.

At this rate Step 3 will weigh 72,900 pounds or nearly $36\frac{1}{2}$ tons. And we are still only beginning. The total six-step rocket, to carry one hundred pounds of payload to the moon, will weigh at starting 26,566 tons!

Now perhaps it is wrong to say it is utterly impossible to build such a rocket. Given time, money and desire enough, possibly it could be done. But it would certainly be a magnificently expensive project!

Hence, as a practical matter, we do not seem to be much nearer the achievement of space-flight than the fiction dreamers of old. There is only this difference: a method is at hand that in theory at least could do the job. The road to accomplishment is clear in outline—but the details are extremely obscure.

It has often been suggested that atomic power, used instead of the chemical fuels upon which the foregoing calculations were based, will make interplanetary flight not only

possible but commonplace. If atomic power can indeed be harnessed practically for rocket use, this would be true. At present too little is known about this exciting new kind of power to predict what we shall be able to do with it, but it certainly does offer one possible solution to the problem of flight to other worlds.

For myself I do not know whether rocket power will ever permit fulfillment of our ambitious desire to reach the moon. Perhaps it isn't of very much moment, for in the age of rocket power jet propulsion will find plenty to do right here on earth. But if there is to be a trip to the moon, count me in. I'd like to go along, too! . . .

What the Rocket Age Promises

IN TODAY'S AGE of jet-propelled robot bombs, V-2 rockets, rocket anti-aircraft batteries, plane-carrying rockets, and infantrymen whose portable rocket bazookas can smash a tank, it is no longer possible for anyone seriously to doubt that the age of rocket power is at hand—or at least that it is just around the corner. But it will bring with it not only new experiences and new possibilities, but also some new problems.

Franklin Roosevelt once referred to the period when the United States was a "horse-and-buggy country." In a horse-and-buggy country people can think of travel only in terms of four miles an hour; their economy is geared to slow communications. Their outlook also is likely to be narrow and provincial, comprehending little beyond the small community in which most

The Coming Age of Rocket Power

citizens spend their entire lives.

In the 1920's and 1930's we made the leap from a horse-and-buggy country to an airplane country, a radio communications country. We found the transition both pleasant and painful. It was stimulating, but it produced great changes in our economy—enormous changes in our outlook, our responsibilities and our position in the world.

World War II continued the process. We became a 350-mile-an-hour country; a transatlantic plane country; a global power, forced to think in terms not of a few miles or even a few hundreds of miles, but of airline distance between principal cities of the world, Great Circle routes, three thousand horsepower engines, and networks of landing fields linking every nation through the trackless atmosphere.

Now comes rocket power, with the promise of speeds that begin

where the plane must necessarily leave off; altitudes beyond the atmosphere itself; flashing mile-a-second craft that will not even need pilots to get them from one place to another across the face of the shrinking globe. We shall have to rise above the airplane mentality, just as in a previous period we had to adjust our horse-and-buggy outlook to the age of flight.

Rocket power in its various forms will introduce a new dimension into human life. It will find uses which we cannot now even imagine. In addition, it will also make more useful many of the things with which we are now familiar.

From every important airport of the world, weather rockets will ascend regularly into the stratosphere, providing pilots with accurate data on the weather at all altitudes, under all conditions. Improved three-dimensional weather

Is the Rocket the Weatherman of the Future?

If the claims for weather rockets sound fantastic, consider the success of Dr. Charles G. Abbot, until recently secretary of the Smithsonian Institution, in forecasting climate months and years ahead with the aid of local weather records and continuous observations of the variations in solar radiation.

From scanty data, so little as to seem most inadequate for such a complex task, he was able to predict that in a given three-month period the rainfall in the Tennessee Valley would be between 84 and 87 per cent of normal. As subsequently measured during the period he named, the rainfall actually was 87 per cent of normal. On another occasion he gave the chief of the Weather Bureau in Washington a list of the days in which rainfall would be about two-thirds greater than on other days of the year. The actual rainfall turned out to be almost exactly as Dr. Abbot had forecast.

These predictions were based on variations in the sun's radiations as observable at the earth's surface. When it becomes practical to send sounding rockets regularly to the outer edges of the atmosphere, it will be easier to measure both these and other variations affecting the weather and climate. The result will benefit almost every kind of human activity on the planet.

by G. Edward Pendray

maps, made possible by innumerable rockets, may enable meteorologists to forecast weather not only for a few hours ahead, but even for days or weeks.

Data as to solar radiation and upper-air conditions, augmented by high-altitude sounding rockets, may even enable weathermen to forecast trends of rainfall, temperature and the like for seasons at a time, to guide farmers in planting and marketers in planning for the even distribution of food.

Even long-time trends such as those which produce cyclical droughts and periods of high rainfall may be determined, or cold periods extending over generations of time, such as brought about the earth's great glacial period.

THE SOUNDING rocket may enrich our knowledge of the earth's atmospheric envelope itself, and disclose more subtle influences: the effects of its aerial tides, for example; the rising and falling of the electrical layers that affect radio transmission throughout the globe; the curious magnetic storms which originate in the sun and sometimes set up violent disturbances in electrical equipment on earth.

The possibilities of mail and express by rocket power, or the new experience of riding jet-driven aircraft at great altitudes and enormous speeds—the effect of such

things can be only dimly imagined, but they will surely produce revolutions in human thought and patterns of action as significant as those brought about by the radio, the invention of refrigeration, or the development of aircraft.

It is interesting, too, to speculate on the new jobs and businesses that may spring up around the rocket industry. Obvious, of course, will be the purely mechanical side: the factories for developing and manufacturing engines; the rocket-body manufacturers; the hundreds of plants needed to develop and build control instruments, sounding devices and radio-control instruments of various types of rockets. Moreover, the production of rocket fuels may possibly become a special branch of the chemical industry, as did the production of automobile and aviation fuels.

If all this seems fantastic, remember that the aviation industry in 1900 employed nobody; by 1920 it provided 36 hundred jobs. Even then, no one took it very seriously as an economic factor in our national life. But by 1930 it was employing fifteen thousand; by 1940 the number had grown to nearly fifty thousand and by August, 1944, more than 1,800,000 were employed in this country alone to meet the war's demands for a device that had not even been in existence forty years before. All of these were *new*

CREDITS

Photos: Page 53, Mike Roberts, Publix Pictorial Service; 54, T. J. Baxter; 55 (top), Camera Clix; 55 (bottom), William Ritasse, Nancy Hull; 56 (top), 57, Robert Bagby, FPG; 56 (bottom), A. Griffin, FPG; 58 (top), Fred Bond; 58 (bottom) W. J. Samitz, Shostal Press Agency; 61, 70, Stanley Lazarus; 69, 4th Cover, Max Kegley; 95-105, 110, Adrian Siegel; 119, Mary Eleanor Browning.

Illustrations: 2nd Cover, Vera Bock; 27, Albert Dorse, Courtesy Anheuser-Busch, Inc., St. Louis, Mo.; 28, Melbourne Brindle; 62-67, Douglass Crockwell; 120, 145, Robert S. Sloan; 146, Chesley Bonestell; 3rd Cover, Arnold W. Ryan.

jobs, created out of need for a new thing in human experience.

Rockets have created new jobs already. It is true that there were many wartime jobs—the total of which has not yet been announced—but it was disclosed recently by the Navy that, in 1944, a hundred million dollars' worth of rockets were used *each month* by that branch of the service alone. It is a safe guess that the Army and other services used at least as many more.

What will the peacetime jet-propulsion industries amount to, in the age of rocket power? This can no more be estimated now than can the true dimensions of a rocket capable of carrying passengers across the Atlantic. As the rocket industry grows, it can be potentially at least as great as the peacetime aviation field. In fact, it will actually be *part* of the aviation industry in some of its phases; the development of jet-driven aircraft may work to increase the usefulness of, and therefore the demand for, planes themselves.

FAST TRANSPORTATION, jobs, industry—these, however, are not what people really live for, in spite of the fact that most of our waking time is devoted to them. The true purpose and fulfillment of life is to know and to understand; to see a fuller concept of the world and its place in the universe, and our own position in the cosmic scheme.

There is something about rocket power which transcends the bleakly mechanical aspects of the subject, and changes its followers into missionaries. It may be the imagina-

tive possibilities of travel through the upper atmosphere, the enormous speeds that are possible, the sense of freedom from cams, gears and the other paraphernalia of ordinary engines—the almost poetic simplicity and inevitability of rocket flight.

Possibly it is the fact that rockets will bring us new knowledge of the realms into which mankind has so far been unable to venture, and thus will extend our mental horizons and enrich the fields of physics, meteorology, radiation and many another science. Perhaps, even, it is the lurking chance—the hope and expectation that will not be stilled—that by rocket power we shall some day be able to visit and explore worlds other than our own.

Whatever it may be, those of us who have spent years in the study and development of rockets have acquired an emotion about them which is almost religious. Somehow we feel privileged, as though we had stood at some obscure crossroads in history and seen the world change. We do not know exactly what we have loosed upon the earth, any more than did Gutenberg with his movable types, or DeForest with his radio tube. But we feel in our souls that it is magnificent and wonderful, and that the human race will be richer for it in time to come.

New speeds, new possibilities, new horizons—both for the human body and the human mind. These are some of the promises of the age of rocket power—an age that is soon to come. Indeed, it may already be here.

'Manuscripts, photographs, editorial ideas and other materials submitted for publication should be addressed to CONET, 366 Madison Avenue, New York 17, N. Y., and must be accompanied by postage or provision for payment of carrying charges if their return is desired in the event that they are not purchased. No responsibility will be assumed by CONET for loss or damage of unsolicited materials submitted for its consideration.'

A Gem from the Coronet Story Teller

From out of Burma, where last year Americans combined with British in heavy fighting against the Japanese, comes the story of one of the strangest incidents of the war. It occurred in the section around Mount Popa, the "Mountain of the Sacred Snakes," near Kyaukpaduang. Legend has it that long ago a Burmese high priestess put a curse on Mount Popa. For centuries no one set foot on the snake-riden slopes of the mile-high extinct volcano, except for priestesses who came four times a year to kiss one of the giant cobras on the forehead.

A party of British engineers were laying out a road in the district when early one morning a lightly-clad, barefoot Burmese priestess was ushered into the presence of their commanding officer, Major O. D. Enfield. She informed him that a Jap captain, late the night before, had forced her to guide his men up the mountain so they could surprise the English from the rear. When they were halfway up, the priestess said, she had invoked the ancient curse. Deadly snakes had killed the entire Japanese company; only she, who was immune, had escaped.

The British major skeptically ordered a scouting plane to fly low over Mount Popa. The pilot returned and reported that Jap bodies were sprawled grotesquely on its slope.

The officer shook his head slowly. In the bizarre war that went on in the jungles there were some things more deadly than modern guns.

—EMILE C. SCHURMACHER

We bear two Coronet programs . . . the *Coronet Story Teller*,
sponsored by Kellogg, Monday through Friday morning, 11:30
A. M. 10:30 CST, 9:30 MST, 10:00 PST. And the *Coronet Front*
line, featuring last minute headlines and top human interest
news of the day, 9:55 p.m., EST, Monday through Friday.
Broadcast over your local American Broadcasting Co. station.



In the mystery of twilight, poetic softness
weds the desolation, and sadness comes with
every laugh. The yuccas vibrate no longer, and
the winds quitting tomorrow's wind lie still.

—Ross Calvin

APACHE JUNCTION, ARIZONA